Supporting Data FY 1998/1999 Budget Estimate Submitted to Congress - February 1997

DESCRIPTIVE SUMMARIES OF THE



RESEARCH, DEVELOPMENT, TEST AND EVALUATION Army Appropriation, Budget Activities 6 and 7

Office of the Secretary of the Army (Financial Management and Comptroller) Department of the Army

"READINESS THROUGH MODERNIZATION"

VOLUME III

19970314 032

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DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS RESEARCH, DEVELOPMENT, TEST AND **EVALUATION, ARMY FEBRUARY 1997** FY 1998/1999 OF THE

VOLUME III
Budget Activities 6 and 7

Office of the Assistant Secretary of the Army (Financial Management and Comptroller) Department of the Army

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FY 1998/1999 RDT&E, ARMY PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

INTRODUCTION AND EXPLANATION OF CONTENTS

- Development, Test and Evaluation program. The Descriptive Summaries are comprised of R-2 (Budget Item Justification Sheet) 1. General. This section has been prepared for the purpose of providing information concerning the Army Research, and R-3 (RDT&E Program Element/Project Cost Breakdown) Exhibits which provide narrative information on all RDT&E program elements and projects for the FY 1996, 1997, 1998 and 1999 time period.
- paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification. 2. Relationship of the FY 1998/1999 Budget Submission to the FY 1997 Budget submitted to Congress. This
- A. Program Element Restructures. Explanations for these changes can be found in the narrative sections of the Program Element R-2/R-3 Exhibits.

OLD		NEW
PE/PROJECT	NEW PROJECT TITLE	PE/PROJECT
0601102A/S16	Science Base/Combat Casualty Care Research	0601102A/S14
0602618A/H81, 0603004A/43A	Liquid Propellant Technology Program	0602618A/H37
0602624A/H28	Fuze Technology	0602624A/H36
0602712A/H24	Camouflage Technology	0602712A/H35
0602785A/791	Personnel System/Performance	0602785A/790
	Technology	
0602787A/825	Combat Casualty Care Technology	0602787A/874
0603001A/XXA	Force XXI Land Warrior	0603001A/J50
0603003A/D368	Improved Cargo Helicopter	0203744A/D430
0603004A/L95	Landmine Warfare Dev	0603004A/43A
0603007A/793	Training Sys and Education	0603007A/792
0603313A/D380	Guided MLRS	0603778A/D784
0604760A/DC77	Computer Generated Forces	0604760A/DC78
0605601A/DE90, DE91,DE92, DE93,	Army Test Ranges and Facilities	0605601A/DF30
D618,D632 & D630		

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A. Program Element Restructures (continued).

OTD		NEW
PE/PROJECT	NEW PROJECT TITLE	PE/PROJECT
0605601A/D630	Non-Major System Test & Design Evaluation	0605601A/D699
0605641A/D670, D671, D672, D672,	Survivability Evaluation	0605604A/D734
D675 & D678		
0605706A/D026	Major Systems Test, Design and Evaluation	0605706A/M542
0303142A/D384 & /D386	Automated Communications Manage-	0303142A/D559
	ment System	

B. FY 1998 Developmental Transitions.

TO	PE/PROJECT	0604817A/D902	0603313A/549	0604802A/284
	PROJECT TITLE	Dismounted Soldier Combat Identification (CID) 0604817A/D902	2.75" Anti-Air Tech Demo	Multi-Purpose Individual Munition
FROM	PE/PROJECT	0602120A/AH15	0602303A/214	0603313A/387

remaining programs listed are outyear initiatives or restructures beyond FY 1998 or were previously funded from other Defense C. Establishment of New FY 1998 Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 1998, in addition to Congressionally directed initiatives for FY 1997, are shown below with asterisks. The appropriations.

PE/PROJECT	0602601A/AH39	0602720A/A876	0602720A/A877		0602787A/A838	0602787A/A839	0602787A/A841	0602787A/A842
TITLE	Voice Instructional Device*	Plasma Energy Pyrolysis System*	Western Environmental Technology Office (WETO)	Environmental Support*	Neurotoxin Exposure Treatment*	Cancer Signal/Cancer Cell Proliferation*	Computer-Assisted Minimally Invasive Surgery*	ENT Minimally Invasive Simulation*





C. Establishment of New FY 1998 Program Elements/Projects (continued).

TITLE Health Tachnology Dondmans*	PE/PROJECT
ricaini i eciniology Koadmaps**	0602787A/A843
repailis A vaccine"	0602787A/A844
l'richloromelamine*	0603002A/D813
Neurofibromatosis*	0603002A/D814
National Medical Testbed*	0603002A/D815
Computer-Based Decision Support Systems*	0603002A/D816
Computer-Aided Diagnostic Research*	0603002A/D817
Advanced Cancer Detection Center*	·0603002A/D818
Nautilus/THEL*	0603308A/D989
Battle Integration Center*	0603308A/D997
LCPK for 2.75 Inch Rockets	0603313A/A567
Advanced Light Anti-Armor Weapon System (ALAWS)*	0603607A/D664
Future Combat System	0603645A/DQ19
LTASS	0603774AD598
Future Scout Vehicle - Advanced Development*	0603645A/D018
Suite of Integrated Infrared Countermeasures Op Test*	0604270A/D2VT
Arm Treatment & Transport Vehicle	0604640A/DG28
Future Scout Vehicle - EMD	0604645A/D022
Mounted Warrior*	0604713A/D680
XM982*	0604802A/D695
Army Systems Engineering & Warfighting Technical Spt*	0604805A/D589
Modernization of Utilities*	0605678A/M744
Survivability Evaluation	0605604A/D734
Ground Combat Vehicle HTI*	0203735A/D718
Bradley A3 P3I (BFV A4)	0203735A/D377
Guardrail Common Sensor	0203744A/D028
UH-60 Door Gun*	0203744A/D504
Force XXI Initiatives*	0203758A/D376
Longbow Hellfire PIP	0203802A/D785
Joint Precision Approach Landing System (JPALS)	0305114A/D711
MLKS Army Technical Architecture*	0603778A/D093
Weapons Systems Modernization Software Maintenance	0708045A/DE26

>

D. FY 1998 programs for which funding was shown in the FY 1997 President's Budget Submit (February 1996), but which are no longer funded.

PE/PROJECT 0203735A/D2UT	TITLE Abrams IOTE	BRIEF EXPLANATION Funds transferred to system line.
0601101A/91E	ILIR-ARI	Program terminated
0601102A/S16	Science Base/Combat Dentistry Research	Program terminated
0602120A/H25	Nuc Effects Surv Tech	Program terminated
0602624A/H23	Non-Lethal Weapons Technology	Program terminated
0602783A/094	Tactical Software Technology	Program terminated
0603627A/E79	Smoke, Obscurant - Advanced Development	Funds transferred to system line
0602787A/825	Combat Maxillofacial Injury	Program terminated
0603001A/594	Metrology & Calibration	Program terminated
0603001A/J28	Test Measurement Technology Development	Program terminated

Descriptive summaries for PE 0603806A - NBC Defense Systems, AD and PE 0604806A - NBC Defense Systems, ED are not provided in this Army submission. Since these programs were transferred to Defense RDT&E in FY 1996, program details are available in the Defense RDT&E submission under PE 0603884BP and PE 0604384BP.

3. Classification. This document contains no classified data. Classified/Special Access Programs which are submitted offline are listed below.

0203735A/DC64	0603003A/DB38/D391	0603710A/DC63
0203806A	0603005A/DC62	0603851A
0203808A	0603009A	0603854A/DC68
0602601A/AC84/DC83	0603013A	0604649A/DG15
0602104A	0603017A	0604328A/DC71
0602122A	0603018A	
0602712A/AC61	0603020A	
0602786A/AC60	0603322A	



Department of the Army FY 1998/1999 RDT&E Program

Date: Feb 1997	Thousands of Dollars	FY 1998 FY 1999		198,854 210,349			523,395 445,831		,136,576 1,108,382	663,368 643,876	4,510,843 4,496,724		86,193 134,298			3,874,153 3,874,693	44,326 50,086		13,500	4,510,843 4,496,724
		FY 1997 FY		179,059		677,676 41	558,250 52	,141,159 1,10	,072,165 1,13	750,761 66	4,930,628 4,51		26,376	4		4,242,671 3,87	47,819 4	0	0	4,930,628 4,51
		FY 1996		181,722	450,837	580,033	454,454	1,124,738	1,234,657	730,971	4,757,412		4,000	560,107	64,814	4,094,970 4	23,699	322	9,500	4,757,412 4
Summary			Summary Recap of Budget Activities	Basic Research	Applied Research	Advanced Technology Development	Demonstration and Validation	Engineering and Manufacturing Development	RDT&E Management Support	Operational Systems Development	Total Research Development Test & Eval Army	Summary Recap of FYDP Programs	Strategic Forces	General Purpose Forces	Intelligence and Communications	Research and Development (FYDP Program 6)	Central Supply and Maintenance	Administration and Assoc Activities	Support of Other Nations	Total Research Development Test & Eval Army

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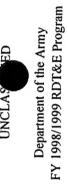


Exhibit R-1

Appropriation: 2040 A Reserach Development Test & Eval Army

Appr	ropriation: 20	Appropriation: 2040 A Reserach Development Test & Eval Army				Da	Date: Feb 1997
I ine	Program Flement					Thousar	Thousands of Dollars
			Act	FY 1996	FY 1997	FY 1998	FY 1999
%	Number	Item					
	0601101A	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	_	13.657	14 393	15113	15 070
7	0601102A	DEFENSE RESEARCH SCIENCES	_	121 827	110 720	170 170	070,01
e	0601104A	UNIVERSITY AND INDUSTRY RESFARCH CENTERS		121,022	119,739	138,165	141,555
	Dogio Do		-	40,243	176,44	42,576	52,966
	Dasic Nesearch	Search		181,722	179,059	198,854	210,349
4	0602104A	TRACTOR ROSE	2	2,484	3,065	0	O
ς ·	0602105A		7	9,858	14,530	9,811	10,979
0 1	0602120A	SENSORS AND ELECTRONIC SURVIVABILITY	7	26,675	19,351	19,294	19,682
- 0	0602122A	I KACTOK HIP	7	5,603	7,981	7,242	8,170
0 0	0602211A	AVIATION TECHNOLOGY	7	17,853	21,898	27,282	30,281
٧ 5	06022/0A	EW IECHNOLOGY	7	14,651	15,510	16,528	18,151
2 =	0602303A		2	17,535	29,144	22,335	24,002
2	0602308A	MODELING & SIMULATION TECHNOLOGY	2	19,466	20,652	21,059	24,287
7 :	0602601A	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	7	35,040	34,312	33,112	33,360
3 2	0602618A	BALLISTICS TECHNOLOGY	7	34,647	39,913	33,317	37,598
1 4	0602622A	CHEMICAL, SMOKE AND EQUIP DEFEATING TECHNOLOG	7	1,728	2,259	4,739	169'9
C 21	0602023A	JOINT SERVICE SMALL ARMS PROGRAM	7	4,857	4,497	4,786	5,204
1 0	0602324A	WEAPONS AND MUNITIONS TECHNOLOGY	2	24,297	22,246	26,980	30,613
10	0602709A	ELECTRONICS AND ELECTRONIC DEVICES	2	21,134	24,351	20,192	22,374
9 0	06072709A	MIGHT VISION LECHNOLOGY	7	16,442	16,636	17,304	19,213
200	0602716A	UNIMAN FACTORS PRICEMENT TO THE WILL THE WAY TO THE WAY THE WAY TO THE WAY TH	2	0	7,372	10,598	10,715
2 5	06027104	FIGURAL FACTORS ENGINEERING LECHNOLOGY ENVIRONMENTAL OTAL TRY TECHNOLOGY	7	15,445	15,968	14,256	15,626
;;	AC212000	COMMAND CONTROL COMMITTEE THOUSE THE COMMITTEE OF THE COM	7	25,537	55,178	17,519	13,869
7 2	0607783A	COMPLIED AND SOFTWARE TESTINGS 1 ECHNOLOGY	7	13,130	14,976	16,838	18,180
3 5	0607784A	MILITARY EXCENERAL SECTION OF SEC	2	3,843	6,500	619	337
75	0002784A	MILITARY ENGINEERING TECHNOLOGY	2	33,734	38,060	36,422	40,112
77	0602785A	MANPOWEK/PERSONNEL/IKAINING TECHNOLOGY	7	7,254	9,329	9,014	9,019
07 6	0602789A	LUGISTICS TECHNOLOGY	2	26,995	21,319	17,689	18,565
70	0602780A	MEDICAL IECHNOLOGY	2	70,575	104,332	74,684	75,307
07	A40/7000	AKMY AKTIFICIAL INTELLIGENCE TECHNOLOGY	2	2,054	2,179	1,255	1,330
	Applied Kesearch			450,837	551,558	462,935	493,665

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Date: Feb 1997

Department of the Army FY 1998/1999 RDT&E Program

1	Program					Thousan	Thousands of Dollars
Line			Act	FY 1996	FY 1997	FY 1998	FY 1999
8	Number	Item					
29	0603001A	LOGISTICS ADVANCED TECHNOLOGY	Э	38,820	22,724	35,469	32,197
30	0603002A	MEDICAL ADVANCED TECHNOLOGY	3	90,591	201,198	10,677	10,959
	0603003A	AVIATION ADVANCED TECHNOLOGY	e	48,320	56,165	31,330	29,921
32	0603004A	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	3	29,119	29,122	18,255	29,717
3 6	0603005A	COMBAT VEHICLE AND AUTOMATIVE ADVANCED TECH	e	26,363	28,811	32,685	59,573
34	0603006A	COMMAND, CONTROL, COMM ADVANCED TECHNOLOGY	3	29,323	29,379	19,688	20,911
35	0603007A	MANPOWER, PERSONNEL AND TRAINING ADV TECH	3	4,576	4,406	3,003	3,006
36	0603009A	TRACTOR HIKE	3	23,016	16,791	14,350	9,574
37	0603013A	TRACTOR DIRT	3	1,713	3,265	3,393	2,448
200	0603017A	TRACTOR RED	3	5,369	8,445	5,572	4,953
30	0603020A	TRACTOR ROSE	m	4,731	4,971	9,204	9,111
40	0603105A	MILITARY HIV RESEARCH	ю	2,795	17,544	2,713	3,162
41	0603238A	Global Surveillance/Air Defense/Precision Strike Technology Demo	ю	37,630	22,009	11,664	4,926
42	0603270A	EW TECHNOLOGY	3	3,818	6,651	8,182	11,754
43	0603313A	MISSILE AND ROCKET ADVANCED TECHNOLOGY	3	109,972	618,66	117,139	89,542
44	0603322A	TRACTOR CAGE	3	8,088	8,651	6,412	5,353
45	0603606A	LANDMINE WARFARE AND BARRIER ADV TECHNOLOGY	3	25,006	27,629	19,332	19,778
46	0603607A	JOINT SERVICE SMALL ARMS PROGRAM	c	4,516	9,049	4,754	5,148
47	0603654A	LINE-OF-SIGHT TECHNOLOGY DEMO	3	13,396	9,791	13,000	20,000
48	0603710A	NIGHT VISION ADVANCED TECHNOLOGY	3	31,142	29,761	19,299	19,250
49	0603734A	MILITARY ENGINEERING ADVANCED TECHNOLOGY	3	14,544	20,213	12,231	17,334
50	0603772A	ADV TACTICAL COMPUTER SCIENCE & SENSOR TECH	3	27,185	21,282	026,61	23,079
	Advance	Advanced Technology Development		580,033	919,119	418,322	431,696
7	0603018A	TRACTOR TREAD	4	14,158	2,329	0	0
5	0603308A	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	4	23,443	66,462	24,138	12,637
53	0603619A	LANDMINE WARFARE AND BARRIER - ADV DEV	4	35,768	27,860	18,882	11,214
5.4	0603627A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-AD	4	2,623	6,246	0	0
55	0603639A	ARMAMENT ENHANCEMENT INITIATIVE	4	58,227	63,240	40,313	18,982
26		ARTILLERY PROPELLANT DEVELOPMENT	4	20,811	8,322	8,521	0
57		ARMORED SYSTEMS MODERNIZATION-ADVANCED DEVE	4	181,647	7,803	2,007	2,008
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Department of the Army FY 1998/1999 RDT&E Program

Exhibit R-1

	Program	Social Development Test & Eval Army				Da	Date: Feb 1997
Line			1			Thousan	Thousands of Dollars
%		Item	Act	FY 1996	FY 1997	FY 1998	FY 1999
58	3 0603649A	ENGINEER MOR FOLLIP ADVANCED DEV					
50			4	13,591	0	0	0
9			4	9,335	11,395	8,982	8,928
20			4	6,360	23,170	21,214	10,049
5			4	5,630	3,941	0	0
2 6			4	6,709	6,541	7,557	7.680
20			4	26,796	25,354	20,920	23.714
200		NATO BESTANDER SYSTEMS ADVANCED DEVELOPMENT	4	3,167	2,769	2,939	2,893
6,4		AVIATION RESEARCH AND DEVELOPMENT (H)	4	0	9,755	13,168	11,169
67		AVIATION - ADV DEV	4	12,893	13,104	7,132	7,450
200		WEAFONS AND MONITIONS - ADV DEV	4	949	0	0	0
90		CBT SERVICE GIREOFF CONTROLL - ADV DEV	4	5,587	7,433	6,783	6,833
70		MEDICAL GEOMETRY CONTROL SYS EVAL & ANALYS	4	13,228	12,689	7,673	7.783
2 5		TELECTOR SYSTEMS - ADV DEV	4	8,878	966'6	6,765	8.700
1,	0603851A	IKACIOK CAGE (Dem/Val)	4	3,234	3,001	1,948	1.627
77	0603856A	SCAMP BI COX II COX OF	4	0	238,590	324,380	294,495
2 2	0603880A	SCAIMF BLUCK II (SPACE)	4	0	8,250	73	699.6
ţ	000000A	COUNTERDROG R&D PROJECTS	4	420	01	0	0
	Demonst	Demonstration and Validation		454,454	558,250	523,395	445.831
t	1.000					•	
27	0604201A	AIRCRAFT AVIONICS	2	20,073	14,694	21,669	12,729
0,	0604220A	AKMED, DEPLOYABLE OH-58D	5	889	1,130	0	0
18	06042704	COMAINCHE	ς.	284,131	331,424	282,009	371,927
70	0604271A	ALL SOURCE ANALYSIS SYSTEMS	S	62,250	73,886	66,212	51,490
80	06043254	ALE SOUNCE AINAL ISIS SYSTEM	S	49,912	39,308	24,045	26,228
200	06043294	TOLLOW-ON TO TOW	2	944	5,479	13,949	50,884
6 01	0604528A	IRACIOR CAGE	5	0	1,524	=	303
70	0604604A	MEDIUM TACTICAL VEHICLES	5	2,923	5,874	3,729	0
0 0	0604611A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ED	2	1,915	0	0	703
50	0604619A	JAVELIN (AWWS-M)	S	2,249	6,014	8,018	5,277
200	AC10+000	EAMILY OF HEAVY TOTAL CONTROL	2	29,453	26,288	19,800	23,075
00	W770+000	FAIMILT OF REAVY TACTICAL VEHICLES	2	2,605	1,958	0	0
		, x					

Department of the Army FY 1998/1999 RDT&E Program

idde	Program	2040 A Avstravil Development Test & Eval Anni)				Thousand	Thousands of Dollars
Line			Act	FY 1996	FY 1997	FY 1998	FY 1999
No	Number	Item					
87	0604633A	AIR TRAFFIC CONTROL	2	5,073	7,377	1,705	1,729
88	0604640A	ADVANCED COMMAND AND CONTROL VEHICLE	2	17,306	7,734	8,867	0
68	0604641A	TACTICAL UNMANNED GROUND VEHICLE	2	0	2,823	2,687	2,663
90	0604642A	LIGHT TACTICLE WHEELED VEHICLE	5	3,970	2,937	606'6	39,919
16	0604645A	ARMORED SYSTEMS MODERNIZATION (ASM)-ENG DEV	5	32,425	6,585	0	0
92	0604649A	ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	5	19,114	46,705	56,196	63,069
93	0604710A	NIGHT VISION SYSTEMS - ENG DEV	5	37,658	34,870	33,456	21,255
94	0604713A	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	5	16,049	76,428	55,964	43,539
95	0604715A	NON-SYSTEM TRAINING DEVICES - ENG DEV	5	50,140	48,788	76,749	73,048
96	0604716A	TERRAIN INFORMATION - ENG DEV	5	8,509	7,144	2,942	2,686
76	0604726A	INTEGRATED METEOROLOGICAL SUPPORT SYSTEM	5	0	0	1,946	1,931
86	0604739A	JTT/CIBS-M (TIARA)	2	0	4,765	4,499	4,447
66	0604740A	TACTICAL SURVEILLANCE SYSTEM - ENG DEV	5	2,954	0	0	0
100	0604741A	AIR DEFENSE C21 - ENG DEV	5	21,810	20,031	18,350	869,9
101	0604746A	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	5	10,648	9,575	2,582	2,533
102	0604760A	DISTRIBUTIVE INTERACTIVE SIMULATIONS ENG DEV	5	0	15,631	20,895	9,242
103	0604766A	TAC EXPLOIT NAT CAP (TENCAP)-EMD (TIARA)	5	23,266	15,235	19,113	19,531
104	0604768A	BRILLIANT ANTI-ARMOR SUBMUNITION(BAT)	2	190,472	161,816	202,302	129,466
105	0604770A	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM	2	15,302	9,624	6,940	5,670
901	0604778A	POSITIONING SYS DEVEL (SPACE)	2	436	428	419	409
107	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT)	5	56,282	26,110	2,823	2,866
108	0604801A	AVIATION - ENG DEV	5	4,885	5,403	5,109	6,067
109	0604802A	WEAPONS AND MUNITIONS - ENG DEV	5	14,845	23,661	3,577	24,865
110	0604804A	LOGISTICS & ENGINEER EQUIPMENT - ENG DEV	5	19,132	19,903	28,039	26,932
111	0604805A	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ED	2	16,740	9,556	11,052	16,395
112	0604807A	MEDICAL MATERIEL/MED BIO DEFENSE EQUIPMENT ED	2	4,644	4,693	4,483	5,408
113	0604808A	LANDMINE WARFARE/BARRIER - ENG DEV	5	6,802	7,556	22,605	44,133
114	0604814A	SENSE AND DESTROY ARMOR - ENG DEV	5	15,764	9,934	22,372	20,813
115	0604816A	LONGBOW	5	21,969	10,644	0	0
116	0604817A	COMBATIDENTIFICATION	5	23,669	16,411	19,784	13,379
117	0604818A	ARMY TACTICAL COMM & CONT HARDWARE & SOFTWAR	2	27,231	15,780	20,022	18,697
118	0604820A	RADAR DEVELOPMENT	2	200	0	0	0
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Exhibit R-1

	Program	To the reserved Development Test & Eval Army				De	Date: Feb 1997
Line			1			Thousar	Thousands of Dollars
Z		11,000	Act	FY 1996	FY 1997	FY 1998	FY 1999
		rtem 					
119		FIREFINDER	2	0	2.496	2.564	12 022
170	0604854A	ARTILLERY SYSTEMS - ENGINEERING DEVELOPMENT	\$	0	2,937	0	897
	Engineer	Engineering and Manufacturing Development		1,124,738	1,141,159	1,107,393	1,162,925
121	0604256A	THREAT SIMULATOR DEVELOPMENT	¥	10 705	200		
122	0604258A	TARGET SYSTEMS DEVEL OPMENT	0 4	13,703	11,383	14,004	11,877
123	0604759A	MAJOR TEST & EVALUATION INVESTMENT	0 9	13,557	9,916	11,688	13,063
124	0605103A	RAND ARROYO CENTER	ی د	17.895	71.100	40,449	33,407
125	0605301A	ARMY KWAJALEIN ATOLL	9	140.930	143 789	128 760	18,040
126	0605502A	SMALL BUS INV RSCH/SMALL BUS TECH PILOT PROG	9	85,919	0	0	142,123
171	0605601A	ARMY TEST RANGES AND FACILITIES	9	142,694	130,222	122,117	128.919
120	0605602A	ARMY TECHNOLOGY & SUSTAINING INSTRUMENTATION	9	25,422	21,944	33,184	32.976
120	0605604A	SURVIVABILITY/LETHALITY ANALYSIS	9	32,250	30,675	32,330	30,678
131	A5095000	A IDOD AFT CENTRICATION	9	33,231	29,974	14,952	14,976
133	A0005000	METEODOLOGICAL GUIDOCATACO TATACA	9	2,821	2,840	2,919	2,924
133	0605706A	MATERIEL SYSTEMS AND WOLD RUISE ACTIVITIES	9	6,458	6,348	6,434	6,658
134	A9072090	EVELOUTATION OF FORTION 1	9	17,241	14,126	29,707	28,675
135	A5075000		9	8,413	7,193	7,762	4,349
136	0605801A	DROGDAMMINE ACTIVITIES LESTING	9	41,078	49,614	81,672	68,949
137	0605807A	INCONAIM WIDE ACTIVITIES [NTFRNATIONAL COORED ATIVE PERFARCITATION AND ATIVE	9 '	64,859	59,708	86,208	85,604
138	0605803A	TECHNICAL INFORMATION ACTIVITIES	9 '	1,555	1,534	1,581	1,581
139	0605805A	MINITIONS STANDARDZION REFECTIVENESS 6 0 5 mm.	9 '	13,549	16,552	15,451	15,872
140	0605853A	ENVIRONMENTAL CONSERVATION	9	16,692	3,211	6,317	5,895
141	ACCOCOCO	DOI 11TION DEVINATION	9	2,493	1,723	1,778	2,977
142	0605856A	FOR THE PRINTING PRINTING BRIDGE	9	11,004	13,602	5,353	4,681
143	A9C8C000	MINIOD CONSTITUTION (PRACE)	9	65,985	54,251	51,378	47,604
77	A8782030	MAINTENANCE AND REPAIR COSTS	9	6,035	4,229	4,393	4,537
	A878C000	Y .	9	86,907	68,580	85,119	74,681
	A6058000	NEAL TNOFER I SERVICES (RPS) RASE ODER ATIONS DETRE	9	0	90,457	88,945	88,936
	Vocacooo	DASE OF EINATIONS-KDIRCE	9	306,481	219,946	231,653	233,633

Date: Feb 1997

Department of the Army FY 1998/1999 RDT&E Program

Appropriation: 2040 A Reserach Development Test & Eval Army

6,693 4,765 34,939 23,932 3,826 Thousands of Dollars 69,443 49,015 44,288 955 50,086 643,876 1,108,382 28,791 2,933 9,941 14,793 15,105 11,431 17,011 4,551 4,496,724 2,609 3,195 4,837 39,039 2,940 56,960 17,412 1,255 2,111 6,690 8,983 5,547 15,045 500 FY 1998 1,136,576 36,520 25,641 9,647 57,827 44,326 13,500 4,510,843 895,599 206,816 137,078 992,9 18,229 18,407 62,804 26,376 38,512 27,888 22,386 3,834 9,874 3,112 2,077 10,185 19,389 47,819 4,930,628 ,072,165 64,557 3,161 39,421 477 FY 1997 4,000 3,703 10,583 59,199 3,346 12,647 8,538 3,455 23,699 9,500 FY 1996 15,007 68,851 36,973 206,625 48,302 4,288 64,920 9,521 4,757,412 1,234,657 52,821 130,971 Act 9 MANAGEMENT HEADQUARTERS (RSCH & DEVELOPMENT) AIRCRAFT MODIFICATIONS/PRODUCT IMPROV PROGRAM AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRA OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS COMMUNICATIONS SECURITY (COMSEC) EQUIPMENT IOINT TACTICAL COMMUNICATIONS PROG (TRI-TAC) MISSILE/AIR DEFENSE PRODUCT IMPRV PROGRAM ADV FIELD ARTILLERY TACTICAL DATA SYSTEM IRAFFIC CNTL/APPROACH/LANDING SYS (JPALS) COMBAT VEHICLE IMPROVEMENT PROGRAMS SECURITY AND INTELLIGENCE ACTIVITIES MLRS PRODUCT IMPROVEMENT PROGRAM JOINT TACTICAL GRD STATION (TIARA) End Item Industrial Preparedness Activities SATCOM GROUND ENVIRO (SPACE) CLOSED ACCOUNT ADJUSTMENT MANEUVER CONTROL SYSTEM AEROSTAT JOINT PROGRAM SPECIAL ARMY PROGRAM Research Development Test & Eval Army ARMY GLOBAL C2 SYS NATO JSTARS - TIARA Operational Systems Development RDT&E Management Support TRACTOR CARD Item DIGITIZATION TRACTOR RUT 0605898A 1001018A A6666060 0603778A 0303142A 0102419A 0203735A 0203740A 0203758A 0203801A 0203802A)301359A 0303140A 0303150A 0305114A)305128A 0203726A 0203744A 0203752A 0203806A 0203808A 0208010A 0208053A Program Element Number Line Total 2 148 147 59 54 55 56 58 09 62 63 64 65 99 67 891 51 52 53 57 19







Appropriated Value as the amount Congress appropriated less undistributed reductions in Sections 8136, 8138, and 8037 (column G of The spreadsheet below reflects the FY97 column of the FY98/99 President's Budget by project. It is provided as clarification to the just recently realized that we should have shown the amount appropriated prior to any reductions (column A), and the total of those reductions (column F) as Adjustments to Appropriated Value. Unfortunately, time did not allow us to change over 400 descriptive summaries before the deadline for this submission. We intend to use this methodology for all future submissions. spreadsheet). This methodology is consistent with past practices and is consistent throughout this submission. However, we attached descriptive summaries. In the Project Change Summary (paragraph B of Exhibit R-2), we have reflected the FY97

C	و	(A-F)	FY 97	Column	on RDDS	9896	3828	757	127	14393	1132	2233	2196	3530	2255	2411	2284	438	1738	5466	3284	1809	2751	6729	831	46812	1287	4798	343	585	8253	3749	5543	450
2	E,	(B+C+D+E)	Tot Adj to	Approp	Value	-207	-82	91-	, c	-308	-24	-48	-47	-75	-48	-51	-49	6-	-37	-118	-70	-39	09-	-143	•18	-1032	-27	-103	1-	-13	-177	8-	-118	O.
<u>s</u>	a			Consulting	Services					0																8								
_	2		Sec 8037	CEBBO	FFRDC					0																-22								
ر)			Sec. 0130	0010 130	6-	4	7	0	-14	7	-2	-5	ů	-5	-2	-2	0	-5	9-	ů	-2	4	9-	-1	-45	-	-5	0	7	œρ	4	٠.	0
æ	2			Sec 9136	octo tac	861-	-78	-15	£.	-294	-23	-46	-45	-72	-46	-49	-47	6-	-35	-112	-67	-37	-56	-137	-17	-957	-26	86-	1-	-12	-169	-77	-113	6-
V	:		FY 97	Approp	raint	9893	3910	168	130	14701	1156	2281	2243	3605	2303	2462	2333	447	1775	5584	3354	1848	2811	6872	849	47844	1314	4901	350	298	8430	3830	1995	468
				Proi		91A	91C	91D	91E		305	31B	52C	53A	74A	74F	F20	F22	H42	H43	H44	H45	H47	H48	H52	H57	99H	H67	H68	S04	S13	S14	S15	S16
				PE	1	61101	61101	61101	61101		61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102
				BA		_	_	_	_			_	_		_	_		_	_	_	_	_			_	_	_			_	_		_	_

G (A-F)	FY 97 Column on RDDS	783	1730	1104	3070	636	6710	675	7100	4376	2676	9833	2838	2838	4881	44927	179059	3065	3065	14530	14530	2596	3604	13151	0	19351	1861	7981
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-17	-37	-24	99-	-14	-143	-15	-152	-93	-121	-210	-61	-61	-105	-961	-3862	99-	99-	-311	-311	-55	-82	-304	0	-441	-171	-171
ഇ	037 Consulting Services					φ.										0	æ		0		0		5-			5 -		0
Q	Sec 8037 FFRDC					-22										0	-22		0		0			-22		-22		0
ပ	Sec 8138	7	7 -		ů	-116	Y	· -		4-	\$-	6-	ę.	43	5-	-43	-173	ů	6-	-14	-14	7.	έ	-13	0	8-	œ	-8 xvi
В	Sec 8136	-16	-35	-51	69	-13	1117	114	-145	-89	-116	-201	-58	-58	-100	-918	-3659	-63	-63	-297	-297	-53	-74	-269	0	-396	-163	-163
∢	FY 97 Approp	800	1767	1128	3136	650	2889	0690	7252	4469	5797	10043	2899	2899	4986	45888	182921	3131	3131	14841	14841	2651	3686	13455	0	19792	8152	8152
	Proj	S17	T22	T24	T25	818	חלט	HS3	H54	H56	H59	H62	H64	H65	H73		. BA 1	B79		H84		140	H15	H16	H25		622	
	PE	61102	61102	61102	61102	61102	61104	61104	61104	61104	61104	61104	61104	61104	61104		TOTAL BA 1	62104		62105		62120	62120	62120	62120		62122	
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G (A-F)	FY 97 Column on RDDS	19213	2685 21898	8599	1169	15510	25228	3916	29144	9298	11354	20652	5854	2056	10318	3025	13059	34312	7839	7343	20328	4403	39913	2259	2259	4497	4497	
F (B+C+D+E)	Tot Adj to Approp Value	-427	-58	-184	-151	-335	-567	-84	-651	-218	-264	-482	-128	-44	-226	-65	-325	-788	-168	-157	-434	-94	-853	-84	-84	96-	96-	
E	37 Consulting Services	-16	-16			0	-27		-27			0	-5		5-		-39	-46					0	7	7		0	
Q	Sec 8037 FERDC		0		6	ကု			0	-19	-21	-40					5-	-5					0	-34	-34		0	
ပ	Sec 8138	-18	-3	• «	-7	-15	-24	4.	-28	6-	-11	-20	9	?	-10	-3	-13	-34		-7	-19	4	-38	7	-5	4	4	xvii
B	Sec 8136	-393	-55 -448	-176	-141	-317	-516	-80	-596	-190	-232	-422	-120	-42	-211	-62	-268	-703	-160	-150	-415	06-	-815	-47	-47	-92	-92	
¥	FY 97 Approp Value	19640	2743 22383	8783	7062	15845	25795	4000	29795	9216	11618	21134	5982	2100	10544	3090	13384	35100	8007	7500	20762	4497	40766	2343	2343	4593	4593	
	Proj	47A	47B	442	906		214	205		060	660		C05	H39	H77	H82	H91		H75	H37	H80	H81		552		H21		
	PE	62211	62211	62270	62270		62303	62303		62308	62308		62601	62601	62601	62601	62601		62618	62618	62618	62618		62622		62623		
	ВА	7	7	2	7		7	7		2	2		7	7	7	7	7		2	7	7	7		2		2		

G (A-F)	FY 97 Column on RDDS	9273	4933	8040	22246	5946	18405	24351	16636	16636	1331	6041	7372	13765	2203	15968	5945	7343	4895	1958	5287	3916	12895	3103	7257	2579	55178	7113	7863	14976
F (B+C+D+E)	Tot Adj to Approp Yalue	-211	-106	-174	-491	-127	-394	-521	-358	-358	-28	-129	-157	-307	-47	-354	-127	-157	-105	-42	-113	-84	-275	99-	-155	-55	-1179	-152	-179	-331
ख)37 Consulting Services	£,		-2	ئ-			0		0			0			0											0			0
Q	Sec 8037 FFRDC	6-			6-			0	-2	-5			0	-13		-13											0		-10	-10
ပ	Sec. 8138	6-	-5	œ	-22	9	-18	-24	-16	-16	-	Ģ	<i>L</i> -	-13	-2	-15	9-	L=	-5	-2	5	4-	-12	ů	1-	-5	-53	1-	8-	-15 xviii
æ	Sec 8136	-190	-101	-164	-455	-121	-376	-497	-340	-340	-27	-123	-150	-281	-45	-326	-121	-150	-100	-40	-108	-80	-263	-63	-148	-53	-1126	-145	-161	-306
⋖	FY 97 Approp Value	9484	5039	8214	22737	6073	18799	24872	16994	16994	1359	6170	7529	14072	2250	16322	6072	7500	2000	2000	5400	4000	13170	3169	7412	2634	56357	7265	8042	15307
	Proj	H18	H19	H28		HIII	H94		H95		C61	H24		H70	H34		048	876	877	822	823	826	829	835	968	F25		179	H92	
	PE	62624	62624	62624		62705	62705		62709		62712	62712		62716	62716		62720	62720	62720	62720	62720	62720	62720	62720	62720	62720		62782	62782	
	BA	7	7	7		7	2		7		7	7		7	7		2	7	7	7	7	7	7	7	7	7		7	7	



G (A-F)	FY 97 Column on RDDS	4231	2269	6500	8377	6551	11140	4195	5425	2372	38060	3042	6287	9329	1630	3208	2937	9245	4299	21319	504	28799	2869	11176	7141	8511	2252	616	IRAM	3427	2448	24477	1958	1616	104332	
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	06-	-48	-138	-179	-140	-263	06-	-116	-50	-838	-65	-134	-199		69-	-63	-219	-103	-489	-10	-1044	-62	-239	-153	-182	-48	-21	TRANSFERRED TO DEFENSE HEALTH PROGRAM	-73	-52	-523	-42	-209	-2658	
ല	S7 Consulting Services			0							0			0				∞.	ů	=									ED TO DEFENSI						0	
a	Sec 8037 FFRDC			0			-24				-24			0				-13	φ	-21									TRANSFERR						0 .	
ပ	Sec 8138	4-	-2	9-	8	9-	-11	4-	ئ.	-2	-36	ů	9-	6-	7-	-3	£ .	6-	4	-21	0	-28	£-	-11	1-	∞-	-5	7	-19	r.	-5	-23	-7	6-	-118	V1V
m	Sec 8136	-86	-46	-132	-171	-134	-228	98-	-111	-48	-778	-62	-128	-190	-33	99-	09-	-189	88-	-436	-10	-597	-59	-228	-146	-174	-46	-20	-400	-70	-50	-200	-40	-200	-2540	
∢	FY 97 Approp Value	4321	2317	8638	8556	1699	11403	4285	5541	2422	38898	3107	6421	9528	1665	3277	3000	9464	4402	21808	514	29843	2931	11415	7294	8693	2300	1000	20000	3500	2500	25000	2000	10000	126990	
	Proj	094	V10		855	H71	T40	T41	T42	T45		790	161		283	C60	110	86H	H99		825	870	873	874	878	819	839	842	844	843	841	838	863	845		
	PE	62783	62783		62784	62784	62784	62784	62784	62784		62785	62785		62786	62786	62786	62786	62786		62787	62787	62787	62787	62787	62787	62787	62787	62787	62787	62787	62787	62787	62787		
	BA	2	7		2	7	7	7	7	7		7	7		7	7	7	7	7		7	7	7	7	7	7	7	7	7	7	7	7	7	7		

(A-F)	FY 97 Column on RDDS	2179	2179	551558	1223	3032	436	1881	246	15936	22724	90626	9034	44058	2350	11749	490	3427	2937	5874	5874	7343	7832	2324	201198	3453	4934	24022	7617	14686	616	474	59195
R (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-47	-47	-12523	-26	-65	6-	-40	ئ	-341	-486	-2094	-194	-942	-50	-251	-10	-73	-63	-126	-126	-157	-168	-49	-4303	-74	-106	-625	-163	-314	-21	-10	-1313
뉙	137 Consulting Services	ć	0	-111							0														0			-109					-109
a	Sec 8037 EFRDC	ć	0	-183							0				•										0								0
ن'	Sec 8138	7.	7	-549	7	ů.	0	-5	0	-15	-21	-94	6-	-42	-5		0	ů	ů.	9-	φ	-7	& -	-5	-193	ů	č	-23	2	-14	-	0	-53
n	Sec 8136	-45	-45	-11680	-25	-62	6-	-38	ئ.	-326	-465	-2000	-185	006-	-48	-240	-10	-70	09-	-120	-120	-150	-160	-47	-4110	-71	-101	-493	-156	-300	-20	-10	-1151
₹	FY 97 Approp Value	2226	2226	584081	1249	3097	445	1881	251	16277	23210	100000	9228	45000	2400	12000	200	3500	3000	0009	0009	7500	8000	2373	205501	3527	5040	24647	7780	15000	1000	484	57478
	Proj	088		. BA 2	242	543	594	C07	128	150		908	810	804	819	893	813	818	817	816	815	887	814	840		313	391	436	447	A38	B38	B97	
	PE	62789		TOTAL BA 2	63001	63001	63001	63001	63001	63001		63002	63002	63002	63002	63002	63002	63002	63002	63002	63002	63002	63002	63002		63003	63003	63003	63003	63003	63003	63003	
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G (A-F)	FY 97 Column on RDDS	5652	21353	2117	29122	4659	13101	4115	1780	1958	3198	28811	7271	11620	3635	4895	1958	29379	1389	3017	4406	16791	16291	3265	3265	8445	8445	4971	4971	17544	17544
Б (В+С+D+E)	Tot Adj to Approp Yalue	-120	-456	-61	-637	66-	-406	88-	-38	-42	89-	-741	-156	-361	-77-	-105	-42	-741	-29	-65	-94	-385	-385	-70	-70	-180	-180	-107	-107	-375	-375
쩐	937 Consulting Services				0		-123					-123						0			0		0		0		0		0		0
Q	Sec 8037 FFRDC			-15	-15	•						0		-110				-110			0	-25	-25		0		0		0		0
ပ	Sec. 8138	\$.	-20	-2	-27	4	-13	4	-5	-2	-3	-28	L	-11	£.	\$-	-5	-28	Ţ	ę.	4-	-16	-16	ů	£-	æρ	œρ	۶.	-5	-17	-17 xxi
æ	Sec. 8136	-115	-436	-44	-595	-95	-270	-84	-36	-40	-65	-590	-149	-240	-74	-100	-40	-603	-28	-62	06-	-344	-344	-67	-67	-172	-172	-102	-102	-358	-358
∢	FY 97 Approp Value	5772	21809	2178	29759	4758	13507	4203	1818	2000	3266	29552	7427	11981	3712	2000	2000	30120	1418	3082	4500	17176	17176	3335	3335	8625	8625	5078	5078	17919	17919
	Proj	232	43A	L95		221	440	441	497	502	C62		247	257	592	296	265		792	793		B18		C25		B69		B77		H29	
	37	63004	63004	63004		63005	63005	63005	63005	63005	63005		90069	90069	90069	90069	90069		63007	63007		63009		63013		63017		63020		63105	
	BA	3	3	8		3	т	3	33	e	æ		n	3	e	3	٣		ъ	٣		ы		ы		ъ		т		ы	

G (A-F)	FY 97 Column	on RDDS	13997	8012	22009	2852	3799	6651	₩	8812	9541	13232	625	7656	23737	36214	_	61866	8651	8651	22734	4895	27629	8070	616	9049	1626	1626	2178	11186	5450	10947	29761
F (B+C+D+E)	Tot Adj to Approp	Value	-449	-200	-649	-61	-82	-143	0	-188	-204	-283	-14	-193	-508	-828	0	-2218	-200	-200	-562	-105	-99	-173	-21	-194	-209	-209	-46	-239	-116	-235	-636
ഥ	ပိ	Services	-124	-28	-152			0								-34		-34	-15	-15	1-		1-			0		0					0
Q	Sec 8037	FFRDC	-22		-22			0						-29		-18		-47		0	-67		-67			0		0					0
၁		Sec 8138	-14	œ,	-22	ę.	4	1-	0	œρ	6-	-13	-	-7	-23	-35	0	96-	φ	œ.	-22	\$.	-27	&-	7	6-	6-	6-	-2	-11	\$ <u>-</u>	-	-29 xxii
B	6	Sec 8136	-289	-164	-453	-58	-78	-136	0	-180	-195	-270	-13	-157	-485	-741	0	-2041	-177	-177	-466	-100	-566	-165	-20	-185	-200	-200	-44	-228	-111	-224	-607
¥	FY 97 Approp	Value	14446	8212	22658	2913	3881	6494		0006	9745	13515	639	7849	24245	37042	_	102037	8851	8851	23296	2000	28296	8243	1000	9243	10000	10000	2224	11425	5566	11182	30397
		Froi	177	546		K15	K16		206	703	263	380	387	486	493	496	550		B92		809	624		627	664		460		C63	K70	K86	K87	
	ç,	1	63238	63238		63270	63270		63313	63313	63313	63313	63313	63313	63313	63313	63313		63322		90969	90969		63607	63607		63654		63710	63710	63710	63710	
		BA	3	n		3	3		3	n	3	3	т	3	3	m	n		3		3	3		3	3		'n		٣	3	3	3	

כי	(A-F)	FY 97	Column on RDDS	1426	9384	9403	20213	13430	955	2689	21282	919119	2329	2329	2823	44058	19581	66462	27860	27860	6246	6246	45581	17773	63354	8322	8322	7803	7803	11395	11395	
Ĺ	(B+C+D+E)	Tot Adj to	Approp Value	-30	-201	-220	-451	-558	-20	-239	-817	-15616	-80	-80	-61	-942	-419	-1422	-604	-604	-134	-134	086-	-387	-1367	-178	-178	-197	-197	-244	-244	
Œ	a a	037	Consulting Services				0			-38	-38	-478		0				0	8	∞.		0	ሌ.		-5		0		0		0	
6	2	Sec 8037	FFRDC			-19	-19	-265		-51	-316	-621	-30	-30				0		0		0		-7	1-		0	-29	-29		0	
ر)		Sec 8138	7	6-	6-	-19	-13	7	1-	-21	-650	-5	-5	ů	-42	61-	-64	-27	-27	9-	9	-44	-17	-61	œ	∞	φ	φ	-11	= ;	УУ
~	2		Sec 8136	-29	-192	-192	-413	-280	-19	-143	-442	-13867	-48	-48	-58	-900	-400	-1358	-569	-569	-128	-128	-931	-363	-1294	-170	-170	-160	-160	-233	-233	
•	¢	FY 97	Approp Value	1456	9585	9623	20664	13988	975	7136	22099	693292	2409	2409	2884	45000	20000	67884	28464	28464	6380	6380	46561	18160	64721	8500	8200	8000	8000	11639	11639	
			Proj	T08	T10	T12		101	243	281	•	, BA 3	B89		066	686	166		909		E79		643	959		B91		610		B99		
			PE	63734	63734	63734		63772	63772	63772		TOTAL BA 3	63018		63308	63308	63308		63619		63627		63639	63639		.63640		63645		63653		
			BA	E)	3	٣		3	С	3			4		4	4	4		4		4		4	4		4		4		4		

G (A-F)	FY 97 Column on RDDS	1518	19745	23283	3941	3941	1905	3347	1289	6541	25354	25354	2769	2769	9755	9755	2181	2010	8913	13104	1414	3868	129	213	98	851	872	7433	10884	1918	12802	
F (B+C+D+E)	Tot Adj to Approp Value	71,	-424	-539	-84	-84	-41	-71	-27	-139	-706	-106	09-	09-	-208	-208	-47	-43	-191	-281	-30	-83	-3	4	-5	-18	-19	-159	-235	-103	-338	
я)	37 Consulting Services	-30	? ?	-41		0				0	-144	-144		0		0				0								0			0	
Q	Sec 8037 FFRDC			0	•	0				0	-17	-17		0		0				0								0	ů	19-	-64	
၁	Sec 8138	4	-19	-22	4	4-	-5	ů	7	9-	-24	-24	ů	÷	6-	6-	-2	-2	6-	-13	7	4-	0	0	0	7		·-	-10	-7	-12	xxiv
æ	Sec 8136	-73	-403	-476	-80	-80	-39	89-	-26	-133	-521	-521	-57	-57	661-	-199	-45	-41	-182	-268	-29	-79	÷.	4-	-2	-17	-18	-152	-222	-40	-262	
4	FY 97 Approp Value	2983	20169	23822	4025	4025	1946	3418	1316	0899	26060	26060	2829	2829	9963	9963	2228	2053	9104	13385	1444	3951	132	217	88	698	168	7592	11119	2021	13140	
	Proj	2OT	370		535		610	699	60D		206		131		169		B32	B33	B45		266	428	G10	GII	G14	K39	K41		091	246		
	A A	51759	63713		63745		63747	63747	63747		63766		63774		63790		63801	63801	63801		63804	63804	63804	63804	63804	63804	63804		63805	63805		
	BA	-	4		4		4	4	4		4		4		4		4	4	4		4	4	4	4	4	4	4		4	4		

G (A-F)	FY 97 Column on RDDS	3754 2581 2844	817 9996 3001 3001	235795 2795 238590	7910 7910 558250	14694 14694 1130 1130	290190 41234 331424	43645 16065 3764 1261 9151	73886 3648 35660 39308
Б (В+С+D+E)	Tot Adj to Approp <u>Value</u>	-81 -55 -61	-18 -215 -123 -123	-5121 -60 -5181	-170 -170	-314 -314 -24	-6338 -882 -7220	-934 -349 -81 -27	-1588 -119 -773 -892
ल	37 Consulting Services		0 01-	77-	0 -285	0 0	-130	7	- 40 40
Q	Sec 8037 FFRDC		0 4 ⁴ 4 ⁴	0	0 -195	0 0	0	9	-10 -10
O	Sec 8138	4 4 4	. 6. . 6.	-226 -3 -229	-8 -8 -537	-14	-278 -40 -318	-15 -15 -1- -9	-71 -4 -34 -38 ×xv
æ	Sec 8136	77- 53- 86-	-17 -205 -62 -62	-4818 -57 -4875	-162 -162 -11412	-300 -300 -23 -23	-5930 -842 -6772	-892 -328 -77 -26	-1510 -75 -729 -804
4	FY 97 Approp Value	. 3835 2636 2905	835 10211 3124 3124	240916 2855 243771	8080 8080 570679	15008 15008 1154 1154	296528 42116 338644	44579 16414 3845 1288 9348	75474 3767 36433 40200
	Proj	808 811 836	837 C75	505 C68	389 BA 4	C97 538	327 C72	665 L12 L15 L16 L18	2FT B19
	34	63807 63807 63807	63807	63854 63854	63856 389 TOTAL BA 4	64201	64223	64270 64270 64270 64270 64270	64321 64321
	BA	4 4 4	4 4	4 4	4	vo vo	<i>w w</i>	<i>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</i>	w w

			¥	8	ပ	Q	स्र	F (B+C+D+E)	G (A-F)
₩	PE	Proj	FY 97 Approp	Sec 8136	Sec 8138	Sec 8037 FFRDC	037 Consulting Services	Tot Adj to Approp Value	FY 97 Column on RDDS
10	64325	E18	5596 5596	-112	ሎ ቊ	0	0	-117	5479
10	64328	C71	1561	.31 -31	- -	0	ል የ	-37	1524
10	64604	H07	0009	-120	99	0	0	-126 -126	5874 5874
10	64611	499	6143	-123	99	0	0	-129	6014
10	64619	088	26909	-538	-25	14-	-17	-621	26288 26288
10	64622	659	2000	-40 -40	77	0	0	-42 -42	1958
10	64633	586	7549 7549	-151	r. r.	0	-14	-172 -172	7377
40	64640	G27	7899	-158	r- r-	0	0	-165	7734
10	64641	E47	2884	-58	ůώ	0	0	-61 -61	2823
10	64642	E40	3000	09-	ůώ	0	0	-63	2937
10	64645	175	6726 6726	-135	9-9-	0	0	-141	6585 6585
10.10	64649	G25 G26	34837 12873 47710	-697 -257 -954	-33 -12 -45	0	è - è	.735 -270 -1005	34102 12603 46705



G (A-F)	FY 97 Column on RDDS	18036	9283	7551	34870	792	47893	21146	1746	4851	76428	35951	2722	10115	48788	7144	7144	4765	4765	20031	20031	9575	9575	10033	2577	3021	15631	15235	15235
R (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-407	-199	-161	-767	-17	-1024	-452	-38	-104	-1635	-801	-59	-217	-1077	-225	-225	-102	-102	-485	-485	-218	-218	-215	-55	-65	-335	-523	-523
ъ)37 Consulting Services	-13			-13						0	•			0	-21	-21		0	-47	-47	ç.	ę.				0	-57	-57
۵	Sec 8037 FFRDC	œ			%						0	-31			-31	-50	-50		0	6-	6-	-10	-10				0	-136	-136
U	Sec 8138	-17	6-	1-	-33	7	-46	-20	-2		-74	-35	ć	-10	-48	1-	1-	ş.	٠.	-19	-19	6-	6-	-10	-2	ů	-15	-15	-15 xxvii
æ	Sec 8136	-369	-190	-154	-713	-16	876-	-432	-36	66-	-1561	-735	-56	-207	866-	-147	-147	-67	-97	-410	-410	-196	-196	-205	-53	-62	-320	-315	-315
¥	FY 97 Approp Value	18443	9482	7712	35637	809	48917	21598	1784	4955	78063	36752	2781	10332	49865	7369	7369	4867	4867	20516	20516	9793	9793	10248	2632	3086	15966	15758	15758
	Proj	697	L70	L74		548	199	899	C40	L40		241	396	573		579		702		126		L59		C73	C74	C77		606	
	PE	64710	64710	64710		64713	64713	64713	64713	64713		64715	64715	64715		64716		64739		64741		64746		64760	64760	64760		64766	
	BA	S	2	5		8	2	2	2	\$		5	2	5		s.		S		5		S		S		2		2	

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ARMY FY97 COLUMN OF FY98/99 PRES BUD

(·	(A-F)	FY 97	Column	COLUMN III	5	67186	18819	75806	161816	9624	9624	428	428	26110	26110	5403	5403	13813	1566	2067	3215	23661	2183	1414	3193	9433	98	1641	1011	942	19903
i	<u>.</u>	(B+C+D+E)	Tot Adj to	Approp	Alue	0	-1436	-402	-1753	-3591	-233	-233	6-	6-	-603	-603	-115	-115	-295	-34	-109	69-	-507	-47	-30	89-	-202	-5	-36	-22	-20	-427
	E)		37	Consulting	SELVICES				-129	-129	-15	-15		0		0		0					0									0
!	Q		Sec 8037	Judaa	FERDE					0	-12	-12		0	-44	-44		0					0									0
	ပ	:		0130	Sec 8138	0	-64	-18	-73	-155	6-	6-	0	0	-25	25	'n	s-	-13	-2	٠ <u>٠</u>	÷.	-23	-5	7	. -	6-	0	-2	-1	7	-19
	8			50.0136	Sec 8130	0	-1372	-384	-1551	-3307	-197	-197	6-	6-	-534	-534	-110	-110	-282	-32	-104	99-	-484	-45	-29	-65	-193	-2	-34	-21	-19	-408
	¥		FY 97	Approp	Value	5	68622	19221	77559	165407	9857	9857	437	437	. 26713	26713	5518	5518	14108	1600	5176	3284	24168	2230	1444	3261	9635	88	1677	1033	962	20330
					Pro	2NT	641	687	889		202		168		571		C45		284	ASI	531	712		194	279	429	HOI	H14	L39	L41	L42	
				E C	2	64768	64768	64768	64768		64770		64778		64780		64801		64802	64802	64802	64802		64804	64804	64804	64804	64804	64804	. 64804	64804	
				•	8A								1							3								· v				



ARMY	COLUMN OF FY98/99 PRES BUD
	FY97 COLUMN

9	(A-F)	FY 97 Column on RDDS	1660	542	6883	471	9226	189	1659	865	1980	4693	5384	2172	7556	300	9634	9934	5749	4895	10644	13575	2836	16411	7621	8159	15780	2496	2496
E (2)	(B+C+D+E)	Tot Adj to Approp <u>Value</u>	-55	-27	-148	-10	-240	4	-36	-19	-42	-101	-115	09-	-175	6-	-206	-215	-123	-105	-228	-311	-61	-372	-163	-486	-649	-55	-55
떮		337 Consulting Services					0					0		8-	∞.	ņ		-3			0	-20		-20		-15	-15.	-2	-2
D		Sec 8037 FFRDC	-19	-15			-34					0		s -	ç.			0			0			0		-290	-290		0
ပ		Sec 8138	7-	-	1-	0	-10	0	-2	7	-2	-5	'n	-5	L.	0	6-	6-	9-	5-	=	-13	÷	-16	7-	œ	-15	-2	-2 xxix
æ		Sec 8136	-34	-11	-141	-10	961-	4	-34	81-	-40	96-	-110	-45	-155	9	-197	-203	-117	-100	-217	-278	-58	-336	-156	-173	-329	-51	-51
Ą		FY 97 Approp Value	1715	569	7031	481	9616	193	1695	884	2022	4194	5499	2232	7731	309	9840	10149	5872	2000	10872	13886	2897	16783	7784	8645	16429	2551	2551
		Proj	760	860	282	485		812	832	834	849		016	415		2ST	644		C87	C31		482	901		323	C34		L85	
		PE	64805	64805	64805	64805		64807	64807	64807	64807		64808	64808		64814	64814		64816	64816		64817	64817		64818	64818		64823	
		BA	8	2	2	2		5	S	8	5		2	2		2	S		S	S		5	2		5	S		~	

G (A-F)	FY 97 Column on RDDS	2937	1141159	11383	6564	3352	9166	2373	31504	9569	40833	21108	21108	143789	143789	0	0	0	0	0	0	0	12557	4685	1545	17054	34436	59945	130222
F (B+C+D+E) (4	Tot Adj to Approp	-63	-25667	-244	-142	-71	-213	-50	-693	-149	-892	-655	-655	-3075	-3075	0	0	0	0	0	0	0	-269	-100	-33	-364	-736	-1288	-2790
E	37 Consulting Services	0	-546	0			0				0		0		0							0							0
Q	Sec 8037 FFRDC	0	989-	0	7		-5		-19		-19	-200	-200		0							0						\$-	ሌ
v	Sec 8138	ψņ	-1097		٩	ငှ	6-	-5	-30	1-	-39	-20	-20	-138	-138	0	0	0	0	0	0	0	-12	4-	-;	-16	-33	-58	-124 xxx
æ	Sec 8136	09-	-23338	-233	-134	89-	-202	-48	-644	-142	-834	-435	-435	-2937	-2937	0	0	0	0	0	0	0	-257	96-	-32	-348	-703	-1225	-2661
A	FY 97 Approp <u>Value</u>	3000	1166826	11627	9029	3423	10129	2423	32197	7105	41725	21763	21763	146864	146864							0	12826	4785	1578	17418	35172	61233	133012
	Proj	509	BA 5	976	238	459		983	984	986		732	·	614		770	771	802	860	861	M40		618	630	632	E90	E91	E93	
	a	64854	TOTAL BA 5	64256	64258	64258		64759	64759	64759		65103		65301		65502	65502	65502	65502	65502	65502		65601	65601	65601	65601	65601	65601	
	BA	S		9	9	9		9	9	9		9		9		9	9	9	9	9	9		9	9	9	9	9	9	



G (A-F)	FY 97 Column on RDDS	21944	4776 5687	3660 4921 5225	5609 797 30675	29974 29974	2840 2840	6348 6348	4169 9957 14126	3235 3958 7193	20355 10324 4304 14631 49614	
F (B+C+D+E) (A	Tot Adj to Approp C Value on	-469	-103	-79 -106 -112	-120 -17 -668	-693	-65 -65	-136 -136	-89 -213 -302	-69 -85 -154	-666 -221 -92 -313	
ы	37 Consulting Services	0			0	0	4 4	0	0	0	-224	
Q	Sec 8037 FFRDC	0	-10		-10	-51	0	0	0	0		
O	Sec. 8138	-21	άά	ቀ ላ ላ	-5 -1 -30	-29	<i>փ փ</i>	9 9	-10 -14	647	-20 -10 -14 -48	XXXI
æ	Sec 8136	-448	98-	-75 -101 -107	-115 -16 -628	-613 -613	-58	-130	-85 -203 -288	-66 -81 -147	-420 -211 -88 -299 -1018	
∢	FY 97 Approp Value	22413 22413	5818	3739 5027 5337	5729 814 31343	30667	2905 2905	6484	4258 10170 14428	3304 4043 7347	21021 10545 4396 14944 50906	
	Proj	628	670	675 675 677	678 679	E97	092	128	026 541	650 C28	985 987 V02	
	31	65602	65604	65604 65604 65604	65604 65604	65605	90959	65702	65706	62709	65712 65712 65712 65712	
	BA	9	999	0 0 0	9	9	9	9	9 9	9 9	0000	

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G (A-F)	(A-F) FV 07	Column on RDDS	7201	3700	3966	5523	4897	5844	5368	2213	2577	12203	3112	382	2728	59708	1534	1534		2562	2805	2261	3376	2134	2739	675	16552	299	576	274	1694	3211	1467	113	143	1733	1
F (B+C+D+E)	Tot Adi to	Approp Value	-154	-80	-85	-118	-105	-125	-119	-47	-55	-362	-67	\$	-59	-1384	-32	-32	;	-64	-65	-48	-72	-46	-59	-15	-369	-15	- 13	4	-37	-71	15.	C	, ,	35-)
ञ	37	Consulting Services							-			-14				-15		0	Ć	Ų.	٠.						-14					0				C	,
Q	Sec 8037	FFRDC							ů.			-85				-88		0									0					0				c	, -
ပ		Sec 8138	<i>L</i> -	4-	4	5-	-5	9-	-5	-2	-2	-12	ę.	0	-3	-58	7	-	r	7.	ŗ,	-5	ų,	-2	ů.	7	-16	7	-	0	2	4-	7	0	0	7	i iinaa
æ		Sec 8136	-147	-76	-81	-113	-100	-119	-110	-45	-53	-251	-64	œ.	-56	-1223	-31	-31	S	5.	/5-	-46	69-	-44	-56	-14	-339	-14	-12	9-	-35	-67	-30	-2	ကု	-35	
¥	FY 97	Approp Value	7355	3780	4045	5641	2005	8969	5487	2260	2632	12565	3179	390	2787	61092	1566	1566	7636	0707	0/87	2309	3448	2180	86/7	069	16921	682	589	280	1731	3282	1498	115	146	1759	
		Proj	M02	MIS	M16	M42	M43	M44	M45	M46	M47	M53	M55	M58	M75		798		720	121	171	67/	730	/33	0.0	218 C18		296	857	F21	F24		220	100	SCC		
		PE	65801	65801	65801	65801	65801	65801	65801	65801	65801	65801	65801	65801	65801		65802		65803	00000	03003	62803	02803	62803	02803	65803		65805	65805	65805	65805		65853	65853	65853		
		BA	9	9	9	9	9	9 .	9 ,	9	9 ,	9 ,	9 ,	9	9		9		9) V	0	٥	0	٥ ،	0 \	0		9	9	9	9		9	9	9		

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G (A-F)	FY 97 Column on RDDS	723	334	140	1916	10220	13602	34126	13680	1469	4976	54251	2708	1040	481	4229	70707	16164	3307	68580	61601	24338	4518	90457	145038	62727	12181	219946	4700	13707	18407	1072165
F (B+C+D+E)	Tot Adj to Approp Value	2	71-		14.	11-	-292	-730	292	-31	-107	-1160	.58	-22	9-	06-	1065	221	711	-1467	-1317	-520	96-	-1933	-3101	-1341	-261	-4703	-101	-293	-394	-23579
函	037 Consulting Services						0					0				0				0				0				0			0	-257
Q	Sec 8037 FFRDC						0					0				0				0				0				0			0	-377
ပ	Sec 8138	-	, .	,	7 -	-10	-14	-33	-13	7	-5	-52	ņ	-	0	4-	-48	-15	ņ	99-	-59	-23	4-	-86	-138	09-	-12	-210	5 -	-13	-18	-1029
B	Sec 8136	=	. "	30	91-	-209	-278	-697	-279	-30	-102	-1108	-55	-21	-10	98-	-1017	-316	89-	-1401	-1258	-497	-92	-1847	-2963	-1281	-249	-4493	96-	-280	-376	-21916
∢	FY 97 Approp Value	546	143	1957	799	10449	13894	34856	13972	1500	5083	55411	2766	1062	491	4319	50862	15807	3378	70047	62918	24858	4614	92390	148139	64068	12442	224649	4801	14000	18801	1095744
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	PE	65854	65854	65854	65854	65854		65856	65856	65856	65856		65876	65876	92829		65878	65878	65878		62879	62879	62829		96859	96859	96859		86859	86859		TOTAL BA 6
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BUDGET ACTIVITY 6 - Management Support)90 N 3d	PE NUMBER AND TITLE 0604256A Threat Simulator Development	TITLE Threat Sir	nulator [evelopn	nent		PROJECT D976
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D976 Army Threat Simulator Program	13705	11383	14004	11877	13858	14083	16535	16452	16452 Continuing Continuing	Continuing

training and weapon system testing. Each capability is pursued in concert with the others so as to avoid duplication while providing the proper mix of test resources needed threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office concerns that the Army conduct operational testing in a realistic threat environment. Initially created to develop simulators of Soviet equipment, the changing world order has to support both Army and Tri-Service testing requirements. The development of the XM17S will be initiated in FY 98. The XM17S simulator represents an advanced air accomplished under the auspices of the Project Manager for Instrumentation, Targets, and Threat Simulators (PM ITTS), and CROSSBOW, which is administered by the A. Mission Description and Budget Item Justification: This program finances the design, fabrication, integration and fielding of realistic mobile threat simulators in represent systems (e.g. missile systems; command, control and communications systems; electronic warfare systems; helicopters; etc.) that are used to portray a realistic support of Army training and developmental/operational testing. It provides the capabilities required to create realistic simulated tactical environments essential to user performance. This system is a very high value battlefield target and the simulator will support targeting evaluation as well as threat testing. The Army Threat Simulator Director for Test, Systems Engineering and Evaluation, Office of the Secretary of Defense (OSD). These affiliations eliminate any duplication within the U.S. Army or expanded the scope of this program to address rest of world (ROW) threats. Actual threat equipment is being acquired when appropriate in lieu of development. Total defense system for testing of U.S. weapon systems. It is highly mobile and very effective against low altitude targets and supports all U.S. electronic countermeasures Program (ATSP) is a continuing program which finances development of realistic mobile threat simulators for Army test organizations. These battlefield simulators development and operational tests including tactics evaluation. This is the only proposed simulation of a multiple target tracking system with enhanced low-altitude package fielding will still be required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is Department of Defense (DoD). Includes research and development effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

FY 1996 Accomplishments:

•	4763	4763 Air Defense Systems - Continued development of XM15A/S short-to-medium range SAM system.
•	616	Advanced/Land Combat Systems - Conducted proof-of-principal testing of eye safe lasers to simulate threat laser weapon XMDEWS.
•	3586	Advanced/Electronic Combat Systems - Continued development of XM330ES VHF communications jammer system.
٠	384	384 Aviation Systems - Initiated/completed concept plan for Global Positioning System (GPS) Advanced Airborne Jammer.
•	3993	Battle Management Network - Continued development of regimental elements of XMC3S tactical air defense command and control system
Total	13705	

Project D976

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Exhibit R-2 (PE 0604256A)

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UNCLASSIFIED

		RDT&E BUDGET ITEM JUSTIFICATI	IFICATION SHEET (R-2 Exhibit) PATE February 1997	7
BUDGET ACTIVITY 6 - Managem	кстіміту nageme i	вирдет Астіvітү 6 - Management Support	PROJECT 0604256A Threat Simulator Development D976	DJECT 176
FY 1997	FY 1997 Planned Program:	rogram:		
٠	5843	Air Defense Systems - Continue development of XM15A/S system.	/S system.	
•	1717	Advanced/Electronic Combat Systems - Complete development of the XM330ES system.	pment of the XM330ES system.	
•	1050	Advanced/Land Combat Systems - Initiate hardware simulator development of a low energy laser XMDEWS,	lator development of a low energy laser XMDEWS.	
٠	2559	Battle Management Network - Continue development of regimental elements of XMC3S	egimental elements of XMC3S.	
•	214	Small Business Innovation Research/Small Business Tech	Business Technology Transfer (SBIR/STTR) Programs.	
Total	11383			
FY 1998	FY 1998 Planned Program:	ogram:		
•	1292	Air Defense Systems - Complete development of XM15A/S system.	/S system.	
•	1657	Air Defense Systems - Implement modifications and upgrades to XM43S system.	rades to XM43S system.	
•	6604	Air Defense Systems - Initiate development of XM17S short-to-medium range SAM system.	nort-to-medium range SAM system.	
•	1657	Advanced Land Combat Systems - Continue development of XMDEWS	of XMDEWS.	
•	2794	Battle Management Network - Continue development of regimental elements of XMC3S.	egimental elements of XMC3S.	
Total	14004			
FY 1999	FY 1999 Planned Program:	ogram:		
	7499	Air Defense Systems - Continue development of XM17S system.	system.	
۰	2488	Advanced Land Combat Systems - Continue development of XMDEWS.	of XMDEWS.	
•	1890	Battle Management Network - Continue development of regimental elements of XMC3S.	egimental elements of XMC3S.	
Total	11877	•		

THREAT SIMULATOR Test Programs Supported: Aircraft Survivability Equipment (ASE) (ALQ-36) (APR-39) Special Electronics Missions Aircraft (SEMA) ASE Force Module (GSM) IOTE; SEMA ASE (ALQ-136 Radar Jammer); AN/APRA (XE-2) Advanced Threat Radar Warning Receiver, SEMA; 155MM and Multiple Launch Rocket System (MLRS) - Sense And Destroy Armor (SADARM); Special Operations (Special mission aircraft for performance and survivability test); Forward Area Air Defense Command, Control and Intelligence (FAAD C21) (Light) FDTE; MLRS SADARM IOTE; Guardrail Common Sensor; OH-58D Kiowa Scout Attack Helicopter; Patriot Development Test and Evaluation (FDTE); Unmanned Aerial Vehicle (UAV) Short Range Initial Operational Test and Evaluation (IOTE); Block 11A Ground Station Product Improvement Program (PIP); MH-60K; Firefinder; RAH-66; UAV - Close Range; Longbow Apache; Forward Area Air Defense (FAAD) C31; Army Tactical Missile System (ATACMS); AN/ALQ-136; Joint Surveillance Target Attack Radar Systems (JSTARS); XM1106 Smoke Generating System; SEMA/ASE; Suite of integrated Infrared Countermeasures (SIIRCM), and Suite of Integrated Radio Frequency Countermeasures (SIRFCM),

Project D976

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RDT&E BUDGET ITEM JUST	TIFICATION SHEET (R-2 Exhibit)	SHEET (F	R-2 Exhibi	()	DATE	February 1997
BUDGET ACTIVITY 6 - Management Support	PE 06	PE NUMBER AND TITLE 0604256A Three	ттге <mark>Гhreat Sim</mark> u	D TITLE Threat Simulator Development		PROJECT D976
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 14005 14397 -692	FY 1997 11627 11383	<u>FY 1998</u> 14040	FY 1999 13976		
FY 1998 Pres Bud Request	13705	11383	14004	11877		
nary Explanation: Funding - FY 1999 decrease of	(\$-2099) realigned to fund higher priority requirements.	fund higher pr	iority requireme			
Project D976	Page 3 o	rage 3 of 3 rages		X	Exhibit R-2 (PE 0604256A)	0604256A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FIM JUS	TIFICA	TION S	HEET (F	2-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0604258A Targ	arget Sy	DE NUMBER AND TITLE 0604258A Target Systems Development	velopme			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13557	9916	11688	13063	12794	13953	15918	14569	Continuing	Continuing
D238 Aerial Targets	8268	6564	6620	5567	5634	6178	6667	6450	Continuing	Continuing
D459 Ground Targets	5289	3352	5068	7496	7160	7775	9251	8119	Continuing	Continuing
Mission Description and Budget Itom Instiffactions This was	This area		ouist on d ou	1 1 1	from finds contain and constant the discount of the					

overall objective is to allow validation of weapon system accuracy and reliability by developing the aerial and ground targets essential for test and evaluation (T&E). They Mission Description and Budget Item Justification: This program funds aerial and ground hardware and software target development, maintenance and upgrade. The are economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing both rotary acceptance and training, and continues development of service peculiar and previously begun target materiel to maintain continuity. Includes research and development wing and ground targets for test and evaluation. The Army executes development of some service peculiar target requirements in support of quality assurance, lot effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	1-2 Exhi	bit)		DATE FeI	February 1997	260
BUDGET ACTIVITY 6 - Management Support			PE NI 090	PE NUMBER AND TITLE 0604258A Targ	PE NUMBER AND TITLE 0604258A Target Systems Development	stems Do	evelopme	ent		PROJECT D238
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D238 Aerial Targets	8268	6564	6620	5567	5634	6178	6667	6450	6450 Continuing Continuing	Continuing

A. Mission Description and Justification: Project D238 - Aerial Targets: Provides for development, acquisition, operation, storage, update, and maintenance of realistic evaluation and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed wing process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, have flight characteristics, signatures and other performance factors which emulate the modern threat. This tasking includes long-range planning to determine future target and development/enhancement/update engineering services of the developed and acquired threat targets to ensure availability for the Test and Evaluation (T&E) customer. surrogate or acquired threat high performance, multi-spectral aerial targets that can fully stress the latest air defense and air-to-air weapons. Modern weapons require test, targets, full-scale, miniature and subscale targets, tactical ballistic targets, ancillary devices and remote control systems. To stress systems under test, aerial targets must needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation The US Army is the Reliance lead for rotary wing targets and the Tri-Service lead for procurement and enhancement of the MQM-107 Fixed Wing Target.

FY 1996 Accomplishments:

- Continued development of HOKUM-X Rotary Wing Target (Canadian Cooperative Program).
- Continued enhancement of the MQM-107 Target System, including update of obsolete parts and ECPs to correct TDP deficiencies. 1429
 - Continued development of the Universal Drone Control System (UDCS), including integration into AH-1 helicopter. 1220
- Continued enhancement of the Target Tracking and Control System (TTCS), including technology upgrades (i.e., replacement of plotting boards with 483
 - Completed participation in Air Force led joint development of Full Scale Fixed Wing Target (QF-4) and continued to participate in and provide funding for Reliance. CRT displays). 755
- Continued development, enhancement, maintenance, and storage for all Research Development Test and Evaluation (RDT&E) aerial targets, towed targets and ancillary devices. 563
 - 8268 Total

FY 1997 Planned Program:

- Continue development of HOKUM-X Rotary Wing Target (Canadian Cooperative Program). 2190
- Continue enhancement of the MQM-107 Target System, including updating of obsolete parts and improved engine performance. 1095
 - Continue development of Universal Drone Control System (UDCS), including integration into AH-1 helicopter.
- Continue enhancement of the Target Tracking and Control System (TTCS), including conversion of data panels to graphic CRTs and development of 717

Project D238

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BUDGET ACTIVITY		February 1997
6 - Management Support	nt Support 0604258A Target Systems Development	ms Development D238
FY 1997 Planned P • 570 • 333 • 156 Total 6564	 FY 1997 Planned Program: (continued) 570 Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. 333 Initiate aerial virtual targets activity 156 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs Total 6564	wed targets and ancillary devices.
FY 1998 Planned Program:	rogram: Continue development of HOKUM-X Rotary Wing Target (Canadian Cooperative Program). Continue enhancement of the MQM-107 Target System, including updating of obsolete parts and improved airframe maneuverability. Complete development of Universal Drone Control System (UDCS) and initiate integration into an additional target (e.g., UH-1 Target). Continue enhancement of the Target Tracking and Control System (TTCS). Includes development of GPS target positioning system. Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. Continue development of aerial virtual targets. Includes models of HOKUM-S and AH-1 variants.	d improved airframe maneuverability. an additional target (e.g., UH-1 Target). ant of GPS target positioning system. wed targets and ancillary devices.
FY 1999 Planned Program:	rogram: Complete baseline configuration and initiate update for HOKUM-X Rotary Wing Target (Canadian Cooperative Program). Continue enhancement of the MQM-107 Target System, including updating of obsolete parts and improved airframe maneuverability. Continue integration of Universal Drone Control System (UDCS) into additional targets (e.g., complete UH-1 Target integration and initiate OH-58 target integration). Continue enhancement of the Target Tracking and Control System (TTCS). Includes update of RMX operating system to more supportable system. Continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets and ancillary devices. Continue development of aerial virtual targets, including models of MQM-107 and its variants. Initiate study for development of Future Aerial Targets.	iian Cooperative Program). d improved airframe maneuverability. smplete UH-1 Target integration and initiate OH-58 XMX operating system to more supportable system. ved targets and ancillary devices.

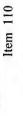
AERIAL TARGETS Test Programs Supported: Forward Area Air Defense (FAAD) Missile (Stinger), Patriot, Medium Extended Air Defense System (MEADS), Non-Line-Of-Sight (NLOS), Comanche, and under Reliance, helicopter targets for the Air Force and Navy and technology programs which demand accurate threat representation in their aerial target.

Project D238

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFICATIO	N SHEET	(R-2 Exhib	it)	DATE February 1997	v 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0604258A Targe	D TITLE Target Sys	Target Systems Development		PROJECT D238
B. Project Change Summary FY 1997 President's Budget Appropriated Value	EY 1996 8478 8717	FY 1997 6706 6564	FY 1998 6626	FY 1999 6553		
Adjustments to Appropriated Value FY 1998 Pres Bud Request	-449 8268	6564	6620	5567		
Change Summary Explanation: Funding: FY 1999 decreased (-986) to fund higher priority requirements.	l (-986) to fund high	er priority require	sments.			
Project D238	Pa	Page 4 of 6 Pages		Ä	Exhibit R-2 (PE 0604258A)	(A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	JEET (R	-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0604258A Target Systems Development	⊓⊓∟E arget Sy	stems De	evelopme	ent		PROJECT D459
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D459 Ground Targets	5289	3352	5068	7496	7160	7775	9251	8119	Continuing	8119 Continuing Continuing

A. Mission Description and Justification: Project D459 - Ground Targets: This program funds Army efforts to support test and evaluation (T&E) of advanced weapon development/enhancement/update engineering services of the developed and acquired targets to ensure availability for test and evaluation customers. Project also manages compatible with Distributed Interactive Simulation (DIS). These products are required to adequately stress weapons systems undergoing test and evaluation. This tasking systems by developing surrogate and acquiring foreign equipment, and developing virtual target computer models of ground vehicle targets. These computer models are includes long range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation process; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and use of current assets and operates centralized spare parts program. The US Army is the Tri-Service lead for providing ground targets for test and evaluation.

FY 1996 Accomplishments:

FY 1997 Planned Program:

941 5289

Total

Continued concept exploration on the Main Battle Tank Surrogate.

(M&C) activities

Complete the development and prototype of BMP3-S armored infantry vehicle.	Complete concept exploration of a Main Battle Tank Surrogate.
870	228

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 228

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Project D459

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		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IN SHEET (R-2 Exhibit) DATE February 1997	1997
BUDGET ACTIVITY 6 - Managem	стіліту ageme i	BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258A Target Systems Development	PROJECT D459
FY 1998 Planned Program:	Yanned P	rogram:		
•	2878	Manage and oversee Primary Operating Centers operation, s	2878 Manage and oversee Primary Operating Centers operation, storage, maintenance, configuration management and repair of Ground Targets assets	s assets
•	121	including acquisition of new material and spare parts. Continue validation, accreditation, and certification and conf	spare parts. itification and configuration controls/studies of ground targets and develon safety and environmental plans	ental nlanc
•	1195	Continue development of virtual ground targets to support T	Continue development of virtual ground targets to support T&E. Develop two new virtual target models and initiate development of a third based on	rd based on
		customer requirements. Continue development and initiate i	customer requirements. Continue development and initiate implementation of configuration control plan for virtual targets. These target models will	models will
	4.50	be utilized in Virtual Proving Ground activities and other weapon systems T&E and M&S activities.	eapon systems T&E and M&S activities.	
0	8/4	Initiate development and prototype of a Main Battle Tank Surrogate.	'urrogate,	
Total	2068			
FY 1999 Planned Program:	Janued P	rogram:		
•	4103	Manage and oversee Primary Operating Centers operation, st	Manage and oversee Primary Operating Centers operation, storage, maintenance, configuration management and repair of Ground Targets assets	s assets
		including acquisition of new material and spare parts.		
•	155	Continue validation, accreditation, and certification and conf	Continue validation, accreditation, and certification and configuration controls/studies of ground targets and develop safety and environmental plans.	ental plans.
•	1869	Continue development of virtual ground targets to support te	Continue development of virtual ground targets to support test and evaluation. Implement configuration control and initiate validation efforts. Target	orts. Target
		models will be utilized in Virtual Proving Ground and other weapon systems T&E and M&S activities.	weapon systems T&E and M&S activities.	Ò
•	1369	Continue development and prototype of a Main Battle Tank surrogate.	surrogate.	
Total	7496)	
GROUND.	TARGET	S Test Programs Supported: Ground Targets efforts are inves	GROUND TARGETS Test Programs Supported: Ground Targets efforts are investments which enable Department of Defense (DoD) customers to conduct appropriate	ropriate
developmer	ntal and of	perational testing, evaluation and training in the future. Weapor	developmental and operational testing, evaluation and training in the future. Weapon systems for which these developments are required include: Comanche, Longbow.	onebow.
Close Com	Anti-A	rmor Weanon System (CCAWS) Wide Area Mine (WAM)	Close Combat Anti-Armor Weapon System (CCAWS) Wide Area Mine (WAM) Non-I ine of Sight (NI OS) I ine of Sight Antisank (I OSAT) A many Tooling Mine.	Missile

Close Combat Anti-Armor Weapon System (CCAWS), Wide Area Mine (WAM), Non-Line of Sight (NLOS), Line-of-Sight Antitank (LOSAT), Army Tactical Missile System (Army TACMS), Brilliant Anti-Armor Submunition (BAT), Unmanned Aerial Vehicle, (UAV-SR), Short Range Anti-Armor Weapon System (SRAW). Javelin, Sense and Destroy Armor (SADARM).

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	5422	3423	2066	8813	
Appropriated Value	5575	3352			
Adjustments to Appropriated Value	-286				
FY 1998 Pres Bud Request	5289	3352	8905	7496	

Change Summary Explanation: Funding: FY 1999 decreased (-1317) to fund higher priority requirements.

Project D459

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RDT&E BUDGET ITEM JUST	TEM JUS	TIFICA	TION SI	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	160
BUDGET ACTIVITY 6 - Management Support			PE NI	PE NUMBER AND TITLE 0604759A Majo	PE NUMBER AND TITLE OG04759A Major Test and Evaluation Investment	t and Ev	aluation	Investme	ant	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	62154	40833	40449	33407	35344	37692	42639	46204	Continuing	Continuing
DC55 Distributed Dev Simulation Tech*	2334	0	0	0	0	0	0	0	Continuing	Continuing
D983 Major Test & Evaluation - USAKA	2360	2373	2430	2427	2522	2620	2673	2731	Continuing	Continuing
D984 Major Technical Test Instrumentation	34992	31504	34515	28412	28060	29245	33307	36125	Continuing	Continuing
D986 Major User Test Instrumentation	22468	6956	3504	2568	4762	5827	6659	7348	Continuing	Continuing

*Project DC55, Distributed Development Simulation Technology, transfers in FY 1997 to PE 0604760A.

Development and Engineering Centers (RDECs); and Battle Laboratories developing future weapon systems and the test programs required for these systems. Army testing facilities are also surveyed to determine current testing capability shortfalls. This PE is appropriate to Budget Activity 6 because it includes research and development effort managed by the Space and Strategic Defense Command). Program also funds development and acquisition of major field instrumentation for U. S. Army Operational Test Evaluation Command (TECOM) test activities including Major Ranges and Test Facility Bases (MRTFB): White Sands Missile Range (WSMR), NM; Yuma Proving Mission Description and Budget Item Justification: This program funds development and acquisition of major developmental test instrumentation for the Test and Ground, (YPG), AZ; Aberdeen Test Center (ATC), MD; Dugway Proving Ground (DPG), UT; and US Army Kwajalein Atoll (USAKA), Marshall Islands (which is and Evaluation Command (OPTEC) test organizations. Requirements for instrumentation are identified through a long range survey of project managers; Research, directed toward support of installations or operations required for general research and development use.

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Exhibit R-2 (PE 0604759A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	R-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI 090	PE NUMBER AND TITLE 0604759A Majo	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	t and Ev	aluation	Investme		PROJECT DC55
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC55 Distributed Dev Simulation Tech*	2334	0	0	0	0	0	0	0	0 Continuing Continuing	Continuing

virtual combined arms battlefield with the warfighter-in-the-loop to evaluate weapon system concepts, tactics, doctrine and test plans. The project also develops and applies A. Mission Description and Budget Item Justification Project DC55 - Distributed Development Simulation Technology: This project supports the Core Distributed Interactive Simulations (DIS) Facilities (CDF) at Fort Knox, KY, Fort Rucker, AL, Fort Benning, GA and the Operational Support Facility in Orlando, FL, which provide Distributed Simulation technology, and provides systems engineering management support to Force XXI and the Synthetic Theater of War (STOW). Funding Line Transfers in FY 1997 to 0604760A under project DC74 Developmental Simulation Technology.

FY 1996 Accomplishments:

•		868 Continued sustainment of Advanced Distributed Simulation Technology support which enables combat, materiel, and training developers and testers
		to perform experiments to test tactics, doctrine and weapon design
	1100	Developed and integrated dismounted warrior simulation capabilities to support concept evaluations and materiel development experimentation.
•	366	Developed analysis tools to support experimentation in the Core DIS Facilities.
Total	2334	

FY 1997 Planned Program: Realigned to 0604760A project DC74 Developmental Simulation Technology.

FY 1998 Planned Program: Realigned to 0604760A project DC74 Developmental Simulation Technology.

FY 1999 Planned Program: Realigned to 0604760A project DC74 Developmental Simulation Technology.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	2698	0	0	0
Appropriated Value	2773			
Adjustments to Appropriated Value	-439			
FY 1998 Pres Bud Request	2334	0	0	0

Change Summary Explanation: Realignment of funding to Program Element 0604760A, project DC74 starting in FY 97.

Project DC55

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Exhibit R-2 (PE 0604759A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (F	1-2 Exhi	bit)		DATE FA	February 1997	407
BUDGET ACTIVITY 6 - Managen	вироет Астіvіту 6 - Management Support			PE NE	PE NUMBER AND TITLE 0604759A Majo	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	t and Ev	aluation	Investme		PROJECT D983
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D983 Major Tes	Major Test & Evaluation - USAKA	2360	2373	2430	2427	2522	2620	2673	2731	Continuing	Continuing
A. Mission Des major Improver Army, Ballistic telemetry, optic required annual	A. Mission Description and Budget Item Justification: Project D983 - Major Test and Evaluation (T&E) Investment - USAKA: This project funds the purchase of major Improvement and Modernization (I&M) equipment at the US Army Kwajalein Atoll (USAKA) in the Marshall Islands. USAKA is a national test range supporting Army, Ballistic Missile Defense Organization (BMDO), US Air Force, National Aeronautics and Space Administration (NASA), and other customers. Upgrades to radar, telemetry, optics, command/control and other equipment are required to maintain USAKA as a national test range. Approximately \$5 million of range improvements are required annually to maintain USAKA test range capability in support of current projected workload.	ation: Proje ipment at the DO), US Air oment are requantly in such a papability in su	ct D983 - M US Army K Force, Natio uired to maii	lajor Test al wajalein Ate nal Aeronau nain USAK.	nd Evaluati oll (USAKA tics and Spa A as a nation d workload.	on (T&E) In) in the Mars ice Administ ial test range	rvestment - shall Islands. ration (NAS). Approxim	USAKA: T USAKA is A), and othe ately \$5 mil	his project fi a national te r customers. lion of range	unds the pur sst range sup Upgrades to	chase of porting radar, nts are
FY 1996 Accomplishments:	 Distribution and integration for Global Positioning Translator Processor System (GPTPS). The GPTPS development is required to allow Kwajalein Missile Range (KMR) to maintain and improve its ability to acquire accurate timing and spacial positioning data on test objects and thus enhance the dynamic metric and miss-distance measurement capabilities 	integration fo MR) to maints and miss-dist	or Global Po iin and impr ince measur	sitioning Tra ove its abilit	ınslator Proc y to acquire ilities	essor Systen accurate tim	n (GPTPS). ing and spac	The GPTPS ial positioni	developmer ng data on te	nt is required sst objects an	to allow d thus
FY 1997 Planned Program:	 Ined Program: 1881 Initiate Advanced Research Project Agency-Lincoln C-Band Observable Radar (ALCOR) Computer/Receiver Upgrade. The ALCOR computer/receiver upgrade is required to improve performance, increase system reliability and reduce maintenance costs 434 Complete Global Positioning System Translator Processory System GTP installation and integration. 58 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 	roject Agenc required to in System Tran esearch/Small	y-Lincoln C. nprove perfe slator Proces Business T	Band Obser ormance, inc ssory System	vable Radar rease systen rGTP install ransfer (SBI	(ALCOR) C reliability a ation and int R/STTR) Pr	Omputer/Reind reduce megration.	ceiver Upgriaintenance o	ade. The AL	COR	
FY 1998 Planned Program: • 2430 Contin Total 2430	ned Program: 2430 Continue Advanced Research Project Agency-Lincoln C-Ban Observable Radar (ALCOR) Computer/Receiver Upgrade. The ALCOR computer/receiver upgrade is required to improve performance, increase system reliability and reduce maintenance costs.	Project Ager required to ir	ıcy-Lincoln nprove perfe	C-Ban Obse ormance, inc	rvable Rada rease systen	r (ALCOR) (reliability a	Computer/Re	sceiver Upgr aintenance c	ade. The Al	LCOR	
FY 1999 Planned Program:	 ned Program: 1400 KMR Outside Communications Plant Upgrade - distribution cable required to support multi-service operational and developmental testing. 1027 Advanced Research Project Agency-Lincoln C-Band Observable Radar (ALCOR) computer/Receiver Upgrade. The ALCOR computer/receiver upgrade is required to improve performance, increase system reliability and reduce maintenance costs. 	ns Plant Upgr gency-Linco e performanc	ade - distrib In C-Band O e, increase s	ution cable ı bservable R. ystem reliab	equired to s adar (ALCO ility and red	upport multi R) computes uce mainten	-service oper //Receiver Uj ance costs.	ational and pgrade. The	development	tal testing. mputer/rece	ver
Project D983				Page 3 of 9 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0604759A)	304759A)	





Per NUMBER AND TITLE	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIC	ON SHEET	(R-2 Exhib		DATE February	1997
FY 1996 2421 2423 2412 2401 2488 2373 2430 2427 2427 2427 Page 4 of 9 Pages Exhibit R-2 (PE 0604759A)	9		PE NUMBER AF 0604759A	Major Test	and Evaluation Inv		PROJECT D983
2360 2373 2427 28 Bud Request 2360 2373 2427 2427 2427 2427 2427 2427 2427 2427	B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 2421 2488	EY 1997 2423 2373	FY 1998 2412	FY 1999 2401		
Page 4 of 9 Pages	FY 1998 Pres Bud Request	2360		2430	2427		
Page 4 of 9 Pages					·		
	Project D983	Pa	ge 4 of 9 Pages		Exhibit R-	2 (PE 0604759A	(1

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	8-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI 090	PE NUMBER AND TITLE 0604759A Majo	ттге Лаjor Tes	t and Ev	aluation	PE NUMBER AND TITLE OCCUPATION INVESTMENT TO TABLE OF THE OCCUPATION INVESTMENT		PROJECT D984
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D984 Major Technical Test Instrumentation	34992	31504	34515	28412	28060	29245	33307	36125	Continuing	36125 Continuing Continuing

processing/evaluation centers. The Hardened Subminiature Telemetry and Sensor System (HSTSS) is developing, miniaturizing and hardening an instrumentation/telemetry collection and remote operations at YPG. The Frequency Surveillance System (FSS), initiated in FY 96, will replace and provide remote capabilities to daily operations for instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command (TECOM) activities. Major instrumentation is defined requires intensive management during acquisition. The Test Support Network (TSN) will provide complete secure coverage of automated and integrated voice, data and Instrumentation (LCI) provides for upgrade and expansion for ATC's suite of instrumentation required for performance testing of combat and tactical vehicles, advanced imaging seekers, and provide the capability to fully simulate and synthesize present and future battlefields with a mix of real and simulated objects at Redstone Technical arrangement control. The Range Digital Transmission System (RDTS), initiated in FY 96, will improve test operations and reduce test costs allowing for efficient data video in a single transport system; provide advanced encryption capabilities and remote control for switching capabilities for test configuration and total network data Test Center (RTTC). The Fiber Optic Network (FON) provides instrumented test areas with high speed communication links to other test facilities and to central data by having one or more of the following attributes: joint service requirements, multiple command use, high visibility, large dollar value, produces a new capability or armor concepts, and advanced munitions. The Dynamic Infrared Scene Projector (DIRSP) will conduct performance testing of night vision sensors and Infrared (IR) A. Mission Description and Budget Item Justification: Project D984 - Major Technical Test Instrumentation: This project develops and acquires major test package that will provide continuous direct measurement of internal functioning and flight data for cannon launched munitions, smart submunitions, and small surveillance of the radio frequency spectrum used at White Sands Missile Range (WSMR) in support of all services and non-DoD agencies. The Land Combat missiles/rockets.

FY 1996 Accomplishments:

- Continued the instrumentation of the Tank Warfare (TW) II Link, high speed networking, and ethernet hub. Initiated securing the Fiber Optic Network (FON) for classified data transmission located at Aberdeen Test Center (ATC). 3202
- Completed instrumentation of Munson Test Area (MTA), acquisition of laser illuminator, development of fiber optics at C-field, Barricades B2 and B3 range instrumentation and continued development of vehicle on-board data acquisition, continued installation of Perryman Test Area (PTA) instrumentation and sensors for Land Combat Instrumentation (LCI) located at ATC. 3819
 - Continued Phase I installation of the Eastern Fiber Optic Backbone (1st of 3 segments completed, 2nd segment nearing completion, and the 3rd initiated) and continued installation of the Network Management System. 13865
- Initiated Frequency Surveillance System (FSS) modernization project, automating five sites capable of monitoring frequencies from 2 Mhz to 100 Ghz at WSMR. 695
 - Continued WSMR execution of the Army's portion of the Global Positioning System (GPS) full rate production contract, acquiring and fielding hardware and software at all Army test organizations. 5195

Project D984

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Exhibit R-2 (PE 0604759A)





		RDT&E BUDGET ITEM JUSTIFICAT	STIFICATION SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Managem	VITY Jeme	вироет Астімту 6 - Management Support	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	Investment	PROJECT D984
FY 1996 Ac	compli 210	6 2	hments: (continued) Continued development of software integration for system level Army Tactical Command and Control System (ATCCS), Enhanced Position Location & Reporting System (EPLRS), & Single Channel Air to Ground Radio (SINCGARS) technical test projects at WSMR/Electronic Proving Ground	CCS), Enhanced Posit MR/Electronic Proving	ion Location g Ground
•	1900	(EPG). Initiated Hardened Subminiature Telemetry and Sensor selectronic packaging techniques in support of flight test	(EPG). Initiated Hardened Subminiature Telemetry and Sensor System (HSTSS) project to develop transmitters, antennas, sensors, polymer batteries and electronic packaging techniques in support of flight tests of indirect/direct fire and smart munitions at Yuma Proving Ground (YPG), Aberdeen, and	sensors, polymer batte	ries and erdeen, and
•	545	Completed range site surveys and system development plan for Yuma Proving Ground (YPG) Range Digita	Completed range site surveys and system development plan for Yuma Proving Ground (YPG) Range Digital Transmission System which is a 5-year	nission System which	is a 5-year
• •	2012 2259	Conducted DIRSP system design trade off analysis and developed initial design. Provided in-house support, concept formulation and engineering analysis to futt	developmental project with the capability (FOC) in F1 of. Conducted DIRSP system design trade off analysis and developed initial design. Provided in-house support, concept formulation and engineering analysis to future instrumentation requirements. Provided Fire Support Automated	Provided Fire Support	Automated
• Total	1290 34992	Test Set (FSATS) for developmental testing of Advance Provided program management support.	Test Set (FSATS) for developmental testing of Advanced Field Artillery Data System (AFATDS), TACFIRE, etc. Provided program management support.		
FY 1997 Planned Program: • 1514 Comple	nned P 1514	te the instrumentation of the TW	II Link, high speed networking, and ethernet hub. Complete securing the FON for classified data	FON for classified dat	а
•	5005	transmission at ATC. Complete installation of PTA instrumentation, complete	transmission at ATC. Complete installation of PTA instrumentation, complete laser illuminator system, complete Barricade B2 and B3 range instrumentation, and complete	nge instrumentation, a	nd complete
•	9993	development of venicle on-board data acquisition and sensors for LC1 at A1C. Complete Phase I of the Eastern Fiber Optic Backbone (2nd and 3rd segments for WSMR TSN. Initiate software qualification testing of the NMS.	development of venicle on-board data acquisition and sensors for LCI at ATC. Complete Phase I of the Eastern Fiber Optic Backbone (2nd and 3rd segments) and continue installation of the Network Management System (NMS) for WSMR TSN. Initiate software qualification testing of the NMS.	vork Management Sys	item (NMS)
• (3959	Award contract for FSS modernization project at WSMF Conclude the Army's portion of the GPS production con	Award contract for FSS modernization project at WSMR. Purchase equipment including control center for initial site.	ite.	
	228		data handling capabilities for system level ATCCS Technical Control Center (TCC) EPLRS, and	ıter (TCC) EPLRS, an	q
•	2703	Complete Concept Exploration and Definition (CED) ph	Complete Concept Exploration and Definition (CED) phase, Test Capabilities and Benefits Analysis (TCBA), and system specification for HSTSS.	ystem specification fo	r HSTSS.
•	4761	Also, Conduct Milestone I/II in-process review, release Continue implementation of the DIRSP project at RTTC	Also, Conduct Milestone I/II in-process review, release request for proposal (RFP), and conduct source selection activities for HS1SS. Continue implementation of the DIRSP project at RTTC, developing critical subsystems and meeting Preliminary Design Review (PDR).	tivities for HSTSS. Jesign Review (PDR).	
Total	742 31504	Small Business Innovation Research/Small Business Technology Transter (SBIR/STTR) Programs.	nnology Transfer (SBIR/STTR) Programs.		
Project D984			Page 6 of 9 Pages Exhit	Exhibit R-2 (PE 0604759A)	1)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET	(R-2 Exhib	it)	DATE February 1997	467
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0604759A Majo	וס דודנו Major Test	PE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	Investment	PROJECT D984
FY 1998 Planned Program:	Program: Complete acceptance testing of the NMS and initiate the system integration and testing of the NMS which will support the Initial Operating Capability (IOC) for the WSMR TSN. Exercise contract option on Phase II to install feeder cable on the portion of the fiber optic cable trunk line running along the east side of WSMR known as the Eastern Backbone. Start and complete Barricade C and Hi Velocity range instrumentation for LCI at Aberdeen Test Center. Initiate/complete data link for FON to Fords Farm testing range at ATC. It is an enclosed facility that allows live firing of Depleted Uranium (DU) ammunition at a target without causing the uranium to be exposed into the surrounding environment upon impact. Continue contract support for FSS modernization project at WSMR. Acquisition and installation of equipment for all remaining sites and control center. Conduct Critical Design Review (CDR) and start fabrication of full up system for the DIRSP project at RTTC. Award contract for HSTSS in support of Yuma Proving Ground (YPG) and the Army Research Lab (ARL).	e the system integration n on Phase II to install feone. ge instrumentation for Lesting range at ATC. It is to be exposed into the suject at WSMR. Acquisorication of full up system ing Ground (YPG) and ring Ground (YPG) and	and testing of the eder cable on the CI at Aberdeen T s an enclosed facurrounding envirtion and installan for the DIRSP in Army Resear.	NMS which will suple portion of the fiber of est Center. lity that allows live find the fibron of equipment for project at RTTC. ch Lab (ARL).	port the Initial Operatin ptic cable trunk line rur iring of Depleted Urani all remaining sites and	g Capability ning along im (DU) control
FY 1999 Planned Program:	rogram: Complete Phase I and initiate Phase II of WSMR TSN contract support for the Interim System. Full TSN capability will be reached upon completion of Phase III of the project. Complete DIRSP integration testing to meet IOC/FOC and field system. Continue installation of FSS equipment at surveillance sites at WSMR. Continue contractual effort for HSTSS to develop open architecture, reconfigurable test instrumentation systems designed to be embedded within future army munitions/smart weapon systems. Continue Phase I of RDTS for the Yuma Cibola western test ranges.	sN contract support for the Cand field system. ce sites at WSMR. Sen architecture, reconfigurer test ranges.	ie Interim Systen gurable test instru	n. Full TSN capability mentation systems de	y will be reached upon o	ompletion
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	<u>되</u>	7. 1996 FY 1997 36897 32197 37933 31504 -2941 31504	FY 1998 34685 34515	EY 1999 28495 28412		
Project D984		Page 7 of 9 Pages 1101		Exhibi	Exhibit R-2 (PE 0604759A)	Item 111





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	IS NOIL	HEET (R	-2 Exhi	bit)		DATE Fe	Fahruary 1997	207
вирдет Астіvітץ 6 - Management Support			PE N	DE NUMBER AND TITLE 0604759A Major Test and Evaluation Investment	TITLE	t and Ev	aluation	Investme		PROJECT D986
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D986 Major User Test Instrumentation	22468	6956	3504	2568	4762	5827	6659	7348	7348 Continuing Continuing	Continuing

weapons systems, and develop player units for the Comanche, Crusader, smart weapons, and antitank missile systems. These system enhancements are required as part of the Information War; Conduct Precision Strikes; and Dominate The Maneuver Battle. Cornerstone is the Mobile Automated Instrumentation Suite (MAIS) that provides users a Army. Beginning in FY 97, enhancements to the MAIS program are Mobile Integrated Non-Intrusive Command, Control and Communications Instrumentation (MINI C31). Current program (one control center and 131 player units) reaches IOC in FY 97. One additional control center and 469 player units are programmed in Other Procurement, simulations, bridge the test analysis centers, and link multi-Service test and training exercises. The MAIS, a non-major system acquisition, achieved Milestone I/II in FY 90. The MINI C3I system assesses the 21st Century's Armed Forces' ability to employ digital technology to obtain greater performance standards in lethality, survivability and instrumentation for Operational Testing (OT), Force Development Testing and Experimentation (FDTE), and Army Warfighting Experiments (AWE). Each initiative set MAIS Pre-Planned Product Improvement (P31) program will be initiated with instrumentation packages for the Longbow Apache helicopter, Javelin, and Stinger weapons. forth in this program element are directly tied to tactical systems that support each of the five Army Modernization Objectives; Project & Sustain; Protect The Force; Win high fidelity, realistic, real-time capability to measure the performance of hardware and personnel under tactical conditions for large scale operations (up to 1830 players). MAIS P31 will provide insertion of enhancements to the RTCA algorithms, simulation of Opposing Force (OPFOR) weapons systems and player units for newly acquired basic program enabling the operational test community to effectively emulate current and future battlefield weapons in a high fidelity environment. The P3I program will tactics modification, and, through the High Level Architecture (HLA) Protocol Data Unit (PDU) format provide data to validate the future DoD warfighting models and tempo. It provides essential audio, video and digital information required for credible testing of command, control and communications systems. Beginning in FY 98 a Information (TSPI) data. The MAIS system and its data are the tools that will enable objective assessments for new materiel acquisition, force structuring, doctrine and The MAIS will instrument combat systems in the operational forces to provide encrypted Real Time Casualty Assessment (RTCA) and Time, Space, and Positioning A. Mission Description and Budget Item Justification: Project D986 - Major User Test Instrumentation: This project finances the development of major field develop and integrate additional weapon systems and capabilities to improve the fidelity and robustness of the MAIS system.

FY 1996 Accomplishments: Mobile Automated Instrumentation Suite (MAIS)

- Assembled Developmental and Operational Test player units.
- Completed logistics shelter assembly and installed equipment.
 - Completed system integration and test, 5726
 - Conducted player unit qualification test 1600
- 3104
- Conducted Government In Plant Qualification Testing.
 - Initiated system Developmental Testing (DT).
 - Provided program management support.

Project D986

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Exhibit R-2 (PE 0604759A)

		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	it)	PAIL February 1997	
вирбет АстіVITY 6 - Managen	Ageme	вирсет Астіviту 6 - Management Support	PE NUMBER AND TITLE 0604759A Majo	ить Major Test	ртпе Major Test and Evaluation Investment	PROJECT Investment D986	CT
FY 1997 Planned Program:	anned P	rogram:					1
	2313 1354	Support system Developmental and Operational Testing for MAIS. Initiate MAIS product refurbishment upon completion of Operational Test.	or MAIS. Operational Test.				
•	700	Initiate development design alternatives for a MAIS interfa system.	ace to the AGES-II	system impleme	ntation for the AH-6	a MAIS interface to the AGES-II system implementation for the AH-64D Apache Longbow weapon	
•	2191	Design and fabricate for MINI C3I a miniature Field Data Collectors (FDC) to support Army Force XXI design decisions and operational test and experiments.	Collectors (FDC) t	support Army	Force XXI design de	cisions and operational test ar	
÷.	244	Instrument two additional mobile command and control vehicles for MINI C3I, each vehicle to include necessary instrumentation and hardware to collect digital, video and audio data to support the Command Post Exercise portion of the Division Army Warfighting Experiment supporting Force XXI.	ehicles for MINI C3 and Post Exercise p	I, each vehicle ortion of the Div	to include necessary ision Army Warfigh	instrumentation and hardware ting Experiment supporting Fo	0 8
• Total	154	Small Business Innovation Research/Small Business Techr	Business Technology Transfer (SBIR/STTR) Programs.	3IR/STTR) Prog	rams.		
Ү 1998 Р	lanned P 2554	 FY 1998 Planned Program: 2554 Initiate the design, development, and implementation of MAIS P3I for smart weapon player units to emulate the Longbow Apache, Javelin, Ground Designated Hellfire, Bradley Stinger, Stinger Surrogate, and Chemical Alarms critical to conducting realistic weapon system operational testing and force development testing. 	IAIS P3I for smart	weapon player u s critical to cond	nits to emulate the L ucting realistic weap	ongbow Apache, Javelin, Groon system operational testing	1d
	950	Instrument five additional Command and Control Vehicle's (C2V's) and procure data transceivers to collect data from dispersed elements of the corps constructive experiment for Instrumentation XXI.	's (C2V's) and proc	ure data transce	ivers to collect data f	rom dispersed elements of the	orp
Total	3504						
Y 1999 Р	lanned P 2568	 FY 1999 Planned Program: 2568 Initiate for MAIS P3I, the design and development for rotary wing player units for the Comanche. Initiate for MAIS P3I, RTCA algorithm enhancement for exposure, evasive action and counter measures. Continue the design, development, and implementation of MAIS P3I for smart weapon player units to emulate the Longbow Apache, Javelin, Ground Designated Hellfire, Bradley Stinger, Stinger and Chemical Alarms, critical to conducting realistic weapon system operational testing and force development testing. 	ary wing player uni asures. Continue th elin, Ground Design d force developmen	is for the Coman e design, develo nated Hellfire, B t testing.	che. Initiate for MA pment, and impleme radley Stinger, Sting	.IS P31, RTCA algorithm ntation of MAIS P31 for smar er and Chemical Alarms, criti	7
Total	2568						
Project Change Summary FY 1997 President's Budget Appropriated Value	hange Su resident' ed Value	mmary EY 1996 23033 5 Budget 23680	FY 1997 7105 6956	FY 1998 3489	FY 1999 2538		
Adjustments to Appropriate FY 1998 Pres Bud Request	its to Appress Bud I	d value	9569	3504	2568		
Project D986	98	P_{ℓ}	Page 9 of 9 Pages		Exhi	Exhibit R-2 (PE 0604759A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	-2 Exhil	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE NI 000	PE NUMBER AND TITLE 0605103A Ranc	PE NUMBER AND TITLE 0605103A Rand Arroyo Center	yo Cent	e		a U	PROJECT D732
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D732 Arroyo Center Support	17895	21108	17576	18040	18452	18833	19321	19815	19815 Continuing Continuing	Continuing

oversee and the senior Army leadership to actively manage the FFRDC. This consolidation of funding will result in no increase in Arroyo Center research activity or The FY 1997 program represents the Army's continuing effort to fund the Arroyo Center entirely within a single program element. Consolidation of Arroyo Center A. Mission Description and Budget Item Justification: This is a level-of-effort program based on a stable level of 104 Member Technical Staff (MTS) per year. Federally Funded Research and Development Centers (FFRDCs) for studies and analysis, such as Arroyo. Greater visibility and stability help both the Congress to funding into one program element responds to congressional direction, which seeks to ensure appropriate visibility and stability for the core work programs of aggregate funding.

(ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army (Research, Development, and Acquisition). The ACPC research is sponsored by the Secretary of the Army, the Assistant Secretaries, the Chief of Staff and Vice Chief of Staff of the Army, the Deputy Chiefs of Staff of provides analysis for both the Army and the broader national security community. Work in this program element is consistent with the resource-constrained Army This program funds the RAND Arroyo Center, the Department of the Army's FFRDC for studies and analysis, which has operated at RAND since FY 1985. The Arroyo Center draws its researchers from RAND's staff of approximately 600 professionals trained in a broad range of disciplines. About 90 percent of RAND's reviews, monitors, and approves the annual Arroyo Center research plan as well as all individual research projects. Each project requires General Officer (or SES staff is located at the corporate headquarters in Santa Monica, California; the remainder is based at RAND's Washington, DC, office. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, which are grouped in four major research areas or core capabilities: equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a unique multidisciplinary capability for independent primarily focused on mid/long-term concerns. Results and analytical findings directly impact senior leadership deliberations on major issues. Arroyo Center Strategy and Doctrine; Military Logistics; Manpower and Training; and Force Development and Technology. The RAND Arroyo Center research agenda is the Army, and most of the Army's major commands. The Arroyo Center is provided guidance from the Army through the Arroyo Center Policy Committee analysis. Although the Arroyo Center staff works with analysts in the Army's internal study program, the Arroyo Center is an independent organization that Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and Project Reliance. This program supports decision making and resource allocation for general research and development and, since it is not allocated to a specific R&D mission, it is appropriately funded in Budget Activity 6.

FY 1996 Accomplishments:

documents defining Force XXI, relating critical assumptions in Army planning documents to current and planned programs, and analyzing the Army's role in the post Goldwater-Nichols DoD planning process with special attention to the need to stabilize funding for long-term experimentation and Research addressing the geopolitical environment and its effects on the Army, including applying the Assumption-Based Planning process to modernization of the force structure.

Project D732

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Exhibit R-2 (PE 0605103A)

	R	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1997
BUDGET ACTIVITY 6 - Managen	VITY ement		Arroyo Center	PROJECT D732
FY 1996 Acco	omplishm 582 Re orc	FY 1996 Accomplishments: (continued) 582 Research addressing strategy, military planning, and regional security, including, developing a conceptual framework to understand ethnic conflicts in order to establish guidelines for potential Army responses to such conflicts; and identifying key mechanisms and related intelligence indicators	sloping a conceptual framework to understan fying key mechanisms and related intelligen	nd ethnic conflicts in tee indicators
33	ass 3933 Re wi exi	associated with operational and tecnnical innovation to enable the Army to improve its predictions about the security environment. Research addressing restructuring initiatives designed to make the Army more efficient, including identifying the means to alleviate potential problems with the Army's plans to fully digitize its forces; examining means of embedding the effects of information operations within constructive simulations; examining the joint implications of Force XXI to understand them in terms of joint doctrine and interoperability; building a knowledge base on the	s predictions about the security environment. It, including identifying the means to alleviat affects of information operations within constrine and interoperability; building a knowless.	te potential problems structive simulations; ledge base on the
	ca the U of Ca	current state of Army logistics communications/miormation systems and developing and evaluating alternative approaches for improving logistics use of communications and information in support of emerging Army initiatives; assessing the information warfare dimensions of a wide range of U.S. and U.N. operations other than war to assist the Army in writing doctrine, thinking about how it can best organize for such operations, and understanding the intelligence demands of such operations; and examining advanced technologies that have the potential to significantly enhance force-projection capabilities against current and future threats.	ind evaluating atternative approaches for imp g the information warfare dimensions of a wi low it can best organize for such operations, at have the potential to significantly enhance	proving logistics use ride range of U.S. and and understanding force-projection
• .4	4772 Re lim stra stra sch	Research addressing force composition, size, and operational concepts, including analysis of how future requirements such as heavy-force conflict, limited armed conflict, peacekeeping, humanitarian assistance missions, and domestic disaster relief might be met by alternative Active-Reserve structures; exploring areas related to future recruiting success; assessing the effects of major changes made to the Reserve Officer Training Corps scholarship program; developing quantitative methods for analyzing personnel movements and applying them to describe alternative ways in which the Army personnel system could operate; developing incentives and policies aimed at reducing personnel turnover in the Reserve Component; analyzing	ysis of how future requirements such as heav disaster relief might be met by alternative A major changes made to the Reserve Officer I nents and applying them to describe alternative lucing personnel turnover in the Reserve Cor	vy-force conflict, active-Reserve Training Corps ive ways in which the mponent; analyzing
• 2	per ins co co 1603 Re wit	performance and resource requirements of strategic alternatives for the future total Army School system; examining alternative methods for allocating instructional staff and training development resources; designing and testing improved approaches and methods for training logistics command and control at higher echelons; and assessing the use of simulations for training at home stations and Combat Training Centers. Research addressing alternative technology applications and technical strategies, including exploring opportunities for increased research collaborations with industry and government agencies to help the Army formulate an effective approach for managing R&D that will permit the exploitation of the best emerging technology now in the commercial sector; assessing the barriers to risk-taking in the Army acquisition system and recommending policy changes that will enhance the efficient of acquisition reform: assessing the barriers defined in the Army acquisition system and recommending policy changes that will enhance the efficient of acquisition reform.	my School system; examining alternative me I approaches and methods for training logistiations and Combat Training Centers. ding exploring opportunities for increased reach for managing R&D that will permit the etaking in the Army acquisition system and relimitations of the decentralized military etaking.	ethods for allocating ics command and esearch collaborations exploitation of the ecommending policy
• 83	the the series of the series s	the proliferation of new information technologies to provide historical evidence for the development of Army doctrine; and assessing the military potential for structural changes now under way in commercial organizations in response to the information revolution, to give Army planners a better sense of the general military applicability of commercial developments to military organizations. Research addressing logistics, sustainment, and redesign initiatives, including conducting pilot implementations of "Velocity Management," aimed at dramatically improving the flow of materials through the logistics system and thereby improving responsiveness and lowering costs; determining whether centralized management and workloading of Army sustainment maintenance activities can provide acceptable readiness and weapon system availability at lower total cost, both in peacetime and wartime; developing and implementing alternatives to measure and improve performance related to materiel management and procurement functions; and evaluating and recommending alternatives for ensuring rapid and responsive distribution	a development of Army doctrine; and assessi se to the information revolution, to give Arm anizations. In policy implementations of "Velocity Mana improving responsiveness and lowering cost activities can provide acceptable readiness are enting alternatives to measure and improve g alternatives for ensuring rapid and responsi	ing the military ny planners a better agement," aimed at ts; determining nd weapon system performance related iive distribution
Total 178	17895	support out in peaceurite and during contingencies.		
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605103A Rand Arrovo Center	PROJECT D732
FY 1997 Planned Program:	Program:		
5119	Research on planning for the Army		
• 1161	Research on the national security environment		
• 2901	Research on force development and modernization		
3481	Research on manning the force	:	
2708	Research on training strategies		
• 774	Research on acquisition reform		
• 4448	Research on logistics redesign		
• 516	earch/Small	Business Transfer (SBIR/STTR) Programs.	
Total 21108			
EV 1008 Dlannod Drogram:	Drogram		
3515	Deceased on algebraic for the Army		
1055	Research on praining to the Amily		
1055	Research on the national security environment		
2636	Research on force development and modernization		
3164	Research on manning the force		
2461	Research on training strategies		
703	Research on acquisition reform		
4042	Research on logistics redesign		
Total 17576			
FV 1999 Planned Program:	Program:		
3608	Research on planning for the Army		
1082	Research on the national security environment		
2706	Research on force development and modernization		
3247	Research on manning the force		
• 2526	Research on training strategies		
• 722	Research on acquisition reform		
4149	Research on logistics redesign		
Total 18040			
Project D732		Drag 2 of 4 Drags	
110 pet D132		i uge 5 of 4 fuges	EXHIDIT K-Z (PE U6U51U3A)

1106

nt and Support Summary Budget		February 1997
FY 1996 FY 1997 F 18356 21763	TILE and Arroyo Center	PROJECT D732
Appropriated Value 18872 21108 Adjustments to Appropriated Value -977 17895 17576 FY 1998 Pres Bud Request 17576 17576	FY 1998 FY 1999 225138 22503 17576 18040	

Change Summary Explanation: Funding: FY 1998 decrease of (-4562) and FY 1999 decrease of (-4463) realigned to meet higher priority requirements.

Project D732

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	rem jus	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 000	PE NUMBER AND TITLE 0605301A Army	PE NUMBER AND TITLE 0605301A Army Kwajalein Atoll	ıjalein At	toll			PROJECT D614
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D614 US Army Kwajalein Atoli	140930	143789	138769	142125	141088	143888	145758	148925	148925 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification: U.S. Army Kwajalein Atoll (USAKA) is a remote (located in the republic of the Marshall Islands), secure activity Army Space surveillance and object identification, and National Aeronautics and Space Administration (NASA) scientific and space programs. Programs supported include Army missile defense, Ballistic Missile Defense Organization (BMDO) demonstration/validation tests, Air Force Intercontinental Ballistic Missile (ICBM) development and which consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, command/control/communications, and data reduction systems. These systems include Spheres, along with the Air Force Space and Missile Center's associated programs. Funding is in support of site installations or operations required for general research and the four unique radars of the Kiernan Reentry Measurement Site (KREMS); super Recording Automatic Digital Optical Tracker (RADOT) long range video-metric tracking technical data in support of National Missile and Theater Missile Defense programs being conducted at USAKA. These test data cannot be obtained except through the use systems, high density data recorders for high data-rate telemetry, and sonobuoy missile impact location system data analysis and reduction hardware and software. USAKA of the Major Range and Test Facility Base as constituted by DoD Directive 3200.11. Its function is to support test and evaluation of major Army and DoD missile systems, Programs supported include Air Force programs Peacekeeper, Minuteman III, and Delta; Army/BMDO's Strategic Target System (STARS), Multi-Service Launch System is contractor operated and is therefore totally dependent upon its associated support contractors. Program also provides funds for the contractors to accomplish installation (MSLS), Midcourse Space Experiment (MSX), Missile Defense Critical Measurements Program, Theater High Altitude Air Defense (THAAD), Patriot, and ground-based Defense Act of 1991 to put in place a Ground Based Defense System by 2006 or earliest date possible. The technical element of USAKA is the Kwajalein Missile Range Force programs require firing at full range with complete data collection during late mid course and terminal trajectory. BMDO programs require range sensors to collect (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), located at USAKA, is one of only three sensors world-wide that has deep-space tracking capability. of technical facilities available on and in the vicinity of USAKA. Data collection on objects in space remains significant because the Advanced Research Project Agency operation and maintenance. The Army, Air Force, Navy and BMDO have programs planned which have significant test and data gathering requirements at USAKA. Air operational tests, U.S. Space Surveillance Network, and NASA Space Transportation System (Shuttle) and orbital debris experiments. USAKA supports the Missile radar; NASA's Space Transportation System (STS), Orbital Debris Measurement Program, Small Expendable Deployer System and Orbital Debris Radar Calibration development, not allocable to specific R&D missions. This type of activity is appropriately funded in Budget Activity 6.

FY 1996 Accomplishments:

- Provided management support (salaries, training, travel, SSDC matrix support, etc.).
 - 8306 Accomplished maintenance and repair projects.
- 10674 Procured petroleum, oils, and lubricants (POL).
 - 10679 Procured other mission operating supplies.
- 6595 Provided air and sea transportation (cargo to and from continental United States).

Project D614

Page 1 of 3 Pages

	RDT&E BUDGET ITEM JUSTIFICATIO	IFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Management Support	ent Support	PE NUMBER AND TITLE 0605301A Army Kwajalein Atoll	PROJECT D614
FY 1996 Accompl	 FY 1996 Accomplishments: (continued) 35332 Continued to support Army, BMDO, NASA, and Air Force developmental and operational missile testing. Continued integration of range technical support contract effort. Developed alternate launch site to support Theater Missile Defense (TMD). 58686 Provided logistical support to self contained islands of USAKA. 2548 Continued physical security support and upgrades to existing USAKA facilities. 	developmental and operational missile testing. Contin apport Theater Missile Defense (TMD). KA. g USAKA facilities.	nued integration of range technical
FY 1997 Planned Program:	Program: Provide management support (salaries, training, travel, SSDC matrix support, etc.). Accomplish maintenance and repair projects.	OC matrix support, etc.).	
• 12800 • 6200 • 34516		ental United States). evelopmental and operational missile testing. Continue	e integration of range technical
• 57000 • 2400 • 3364 Total 143789		A. USAKA facilities. ology Transfer (SBIR/STTR) Programs.	
FY 1998 Planned Program:	Provide management support (salaries, training, travel, SSDC matrix support, etc.). Accomplish maintenance and repair projects. Procure POL. Procure POL. Provide air and sea transportation (cargo to and from continental United States). Continue to support Army, BMDO, NASA, and Air Force developmental and operational missile testing. Continue integration of range technical support contract effort. Provide logistical support to self contained islands of USAKA. Continue physical security support and upgrades to existing USAKA facilities.	C matrix support, etc.). ental United States). evelopmental and operational missile testing. Continue A. USAKA facilities.	e integration of range technical
Project D614	Pag	Page 2 of 3 Pages	Exhibit R-2 (PE 0605301A)







RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	1-2 Exhibi	t)	DATE February 1997	
BUDGET ACTIVITY 6 - Management Support	ort	PE NUMBER AND TITLE 0605301A Army	D TITLE Army Kwajalein Atoll	lein Atoll	PROJEC D614	PROJECT D614
FY 1999 Planned Program:	Provide management support (salaries, training, travel, SSDC matrix support, etc.). Accomplish maintenance and repair projects. Procure POL. Procure POL. Provide air and sea transportation (cargo to and from continental United States). Continue to support Army, BMDO, NASA, and Air Force developmental and operational missile testing. Continue integration of range technical support contract effort Provide logistical support to self contained islands of USAKA. Continue physical security support and upgrades to existing USAKA facilities.	DC matrix support, einental United States; developmental and oxXA.	tc.). perational miss	ile testing. Continu	ue integration of range technic	=
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	EY 1996 144439 149769 -8839 140930	FY 1997 136864 143789 143789	EY 1998 125739 138769	FY 1999 120893 142125		
Change Summary Explanation: Funding; FY 1998 increase of FY 1999 increase of Project D614		(+13030) provided to maintain infrastructure and range operations. (+21232) provided to maintain infrastructure and range operations. Page 3 of 3 Pages	ructure and ran		Exhibit R-2 (PE 0605301A)	
		1110			Ite	Item 113

RDT&E BUDGET ITEM JUS	TEM JUS		TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	160
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605601A Arm)	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	t Ranges	and Fac			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	142694	130222	122117	128919	109578	111859	114406	117280	Continuing	Continuing
DF30 Army Test Ranges & Facilities	0	0	119728	126953	108082	110337	112856	115699	Continuing	Continuing
DE90 Yuma Proving Ground	19988	17054	0	0	0	0	0	0	0	37042
DE91 Aberdeen Test Center	34138	34436	0	0	0	0	0	0	0	68574
DE92 Dugway Proving Ground	12508	0	0	0	0	0	0	0	0	12508
DE93 White Sands Missile Range	55176	59945	0	0	0	0	0	0	0	115121
D618 Aviation Technical Test Center	14369	12557	0	0	0	0	0	0	0	26926
D630 TECOM Test Design and Evaluation	3871	4685	0	0	0	0	0	0	0	8556
D632 Redstone Technical Test Center	2644	1545	0	0	0	0	0	0	0	4189
D699 Non-Major Systems Test Design & Evaluation	0	0	2389	1966	1496	1522	1550	1581	Continuing	Continuing
NOTE: Effective FY 1998, this PE has been restructured to reflect under Project	flect under Projec		S Army Test and	Evaluation Cor	DF30 the US Army Test and Evaluation Command's (TECOM) new mission as Test Integrator under the Army's new Integrated	OM) new missi	on as Test Inter	grator under the	e Army's new In	itegrated

Test and Evaluation (T&E) Process (funded in D630 in FY97) along with technical testing at all TECOM Test Centers (previously funded under Projects DE90, DE91, DE93, D618 and D632). (DE92 was moved in FY 1997 to DoD PE 0605384BP). The FY 1997 consolidation of the Army's materiel evaluation mission under the US Army Operational Test and Evaluation Command (OPTEC) is financed under Project D630 in FY97 and through new Project D699 beginning in FY 1998.

Mission Description and Budget Item Justification: Sustains an objective test capability for technical testing and support to operational testing of DoD materiel, weapons integrated test planning plus safety assessment/verification, and to perform test design and evaluation functions for non-major programs. Technical test capabilities at each and weapons systems from concept through production within the acquisition cycle at four Major Range and Test Facility Bases: Yuma Proving Ground, AZ; Aberdeen test range have been uniquely established, are in place to support independent test and evaluation (T&E) requirements of funded weapons programs, and are required to Fest Center, Aberdeen Proving Ground, MD; Dugway Proving Ground, UT (through FY 96 only), White Sands Missile Range, NM. This PE also sustains an objective assure technical performance, adherence to safety requirements, reliability, logistics supportability, and quality of materiel in development and in production. Program technical test capability at: Aviation Technical Test Center, Fort Rucker AL; Redstone Technical Test Center, Redstone Arsenal, AL; and a capability to provide for unding includes efforts toward leveraging technologies to include procurement of essential equipment, personnel training and facility modernization to support the

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY

PE NUMBER AND TITLE

February 1997

6 - Management and Support

0605601A Army Test Ranges and Facilities

agency for ground vehicles, gun munitions, electric guns, surface-to-air missiles. This initiative is currently supported by the services Vice Chiefs of Staff in their role as the acquisition costs. Current testing capabilities are not duplicated within DoD and represent baseline requirements to assure acceptable risk to the soldier as new technologies T&E Board of Directors. This PE finances indirect test operating costs not billable to test customers, replacement of test equipment and test facility modernization projects finance reimbursable costs directly identified to a user of these ranges; these direct costs are borne by materiel developers and project/product managers in accordance with to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological advances. This PE does not DoD Directive 3200.11. This PE also includes costs to downsize the workforce commensurate with T&E workload reductions. Starting in FY 1997, funding for Project emerge into fielded weapons systems. As part of the DoD RELIANCE initiative, the Army (via this PE) has committed at the highest senior service levels to be the lead warfighter's testing requirements. It also provides for leverage, integration and use of virtual and synthetic test tools/capabilities for reduction of test costs and program DE92 has been transferred to DoD PE 0605384BP, Chemical and Biological Defense Program. Test and Evaluation operations are required for general research and development; therefore, this PE is appropriate for inclusion in Budget Activity 6.

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Exhibit R-2 (PE 0605601A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	HEET (R	-2 Exhil	bit)		DATE FeI	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE NI 090	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	гіт <u>ге</u> rrmy Tes'	t Ranges	and Fac	ilities	1	PROJECT DF30
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DF30 Army Test Ranges & Facilities	0	0	119728	126953	108082	110337	112856	115699	115699 Continuing Continuing	Continuing

programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, and quality of materiel in development and Technical test capabilities at each test range have been uniquely established, are in place to support independent test and evaluation (T&E) requirements of funded weapons Center, Fort Rucker AL; Redstone Technical Test Center, Redstone Arsenal, AL; and a capability to provide for integrated test planning plus safety assessment/verification. modernization to support the warfighter's testing requirements. It also provides for leverage, integration and use of virtual and synthetic test tools/capabilities for reduction weapons systems from concept through production within the acquisition cycle at three Major Range and Test Facility Bases: Yuma Proving Ground, AZ; Aberdeen Test of test costs and program acquisition costs. Current testing capabilities are not duplicated within DoD and represent baseline requirements to assure acceptable risk to the Center, Aberdeen Proving Ground, MD; White Sands Missile Range, NM. This program also sustains an objective technical test capability at: Aviation Technical Test soldier as new technologies emerge into fielded weapons systems. Program also finances indirect test operating costs not billable to test customers, replacement of test A. Mission Description and Justification: Sustains an objective test capability for technical testing and support to operational testing of DoD materiel, weapons and equipment and test facility modernization projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test in production. Program funding includes efforts toward leveraging technologies to include procurement of essential equipment, personnel training and facility operations, and technological advances. It also includes costs to downsize the workforce commensurate with T&E workload reductions.

FY 1996 Accomplishments: Project funded under projects DE90, DE91, DE92, DE93, D618, D632 and that portion of D630 which provided for command-wide integrated test planning, safety assessment/verification and test operations. FY 1997 Planned Program: Project funded under projects DE90, DE91, DE93, D618, D632 and that portion of D630 which provided for command-wide integrated test planning, safety assessment/verification and test operations.

Project DF30

Page 3 of 20 Pages







	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Managem	BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	
FY 1998 Planned Program: 119252 Comme D630, a Proving Proving Technic Light/N Bradley Brillian and RT Aircraft Sensor ATC, A ATC, A ATC, A Total 119728	Program: Command-wide integrated test planning, safety assessment/verification and test operations (previously funded under DE90, DE91, DE93, D618, D630, and D632). Some of the major systems to be tested include: ABRAMS Tank at Aberdeen Test Center (ATC), LONGBOW Apache at Yuma Proving Ground (VPG), Naval Ship Structures at ATC, Artillery Systems Dem/val (Crusader) at YPG, LONGBOW HELLFIRE at Redstone Technical Test Center (RTTC), COMANCHE Helicopter subsystems at YPG and Aviation Technical Test Center (ATTC), Javelin at RTTC, Light/Medium Tactical Vehicles (4X4) at ATC, Army Tactical Missile System (ATACMS) Block IA and II at White Sands Missile Range (WSMR), Bradley Infantry Fighting Vehicle System at ATC, and YPG, Theater Missile Defense and Theater Area High Altitude Area Defense at WSMR, Brilliant Anti-Armor Terminally Guided Submunition (BAT) at WSMR and RTTC, Multiple Launch Rocket System (MLRS) and Launcher at WSMR, and RTTC, Improved Target Acquisition System/TOW missile at RTTC, Enhanced Fiber Optic Guided Missile (EFOG-M) at RTTC and WSMR, Aireraft Survivability Equipment at ATTC, Heavy Assault Bridge at ATC, Airborne Avionics at ATTC, Forward Area Air Defense Ground Based Sensor at WSMR, Air Reconnaissance Low at ATTC and WSMR, EH-60 QUICKFIX at WSMR, M915A2 Line Haul Truck at ATC. Airborne Engineering Evaluation Support Activity (AEESA) Airborne Engineering Evaluation Support Activity (AEESA)	t/verification and test operations (previously fun include: ABRAMS Tank at Aberdeen Test Centillery Systems Dem/Val (Crusader) at YPG, LC ubsystems at YPG and Aviation Technical Test tical Missile System (ATACMS) Block IA and St. Theater Missile Defense and Theater Area Hi CT) at WSMR and RTTC, Multiple Launch Rockssile at RTTC, Enhanced Fiber Optic Guided M Bridge at ATC, Airborne Avionics at ATTC, Fe WSMR, EH-60 QUICKFIX at WSMR, M915A2 ATDS) at YPG, Land Warrior at ATC and YPG, A)	ded under DE90, DE91, DE93, D618, ter (ATC), LONGBOW Apache at Yuma NGBOW HELLFIRE at Redstone Center (ATTC), Javelin at RTTC, II at White Sands Missile Range (WSMR), gh Altitude Area Defense at WSMR, et System (MLRS) and Launcher at WSMR issile (EFOG-M) at RTTC and WSMR, orward Area Air Defense Ground Based I. Line Haul Truck at ATC, M1 Breacher at and Heavy Utility Truck at ATC.
FY 1999 Planned Program: 121089 Comma ABRAN ATC an HELLF Javelin Bradley Neutral and Lau TOW at ATTC, Helicop Advanc Include: 5378 Modern technold Total 126953	Program: ABRAMS Tank at Aberdeen Test Center (ATC), LONGBOW Apache at Yuma Proving Ground (YPG), Close Combat Tactical Trainer (CCTT) at ATC and White Sands Missile Range (WSMR), Naval Ship Structures at ATC, Artillery Systems Dem/Val (Crusader) at YPG, LONGBOW HELLFIRE at Redstone Technical Test Center (ATTC), Longbox Missile Range (WSMR), Naval Ship Structures at ATC, Artillery Systems Dem/Val (Crusader) at YPG, LONGBOW HELLFIRE at Redstone Technical Test Center (ATTC), Javelin at RTTC, Medium and Light/Medium Tactical Vehicles (4x4) at ATC, Artillery Systems at YPG and Aviation Technical Test Center (ATTC), Javelin at RTTC, Medium and Light/Medium Tactical Vehicles (4x4) at ATC, Army Tactical Missile System (ATACMS) Block IA and II at WSMR, Bardley Infant-Armor Terminally Guided Submunition (BAT) at WSMR and RTTC, Multiple Launch Rocket System (MLRS) and Launcher at WSMR and RTTC, Improved Recovery Vehicle at ATC, Improved Tagget Acquisition System/TOW missile at RTTC, Follow-on to TOW at RTTC, SMART-T at WSMR, Enhanced Fiber Optic Guided Missile (EFOG-M) at RTTC and WSMR, Aircraft Survivability Equipment at ATC, Heavy Assault Bridge at ATC, Airborne Avionics at ATTC, Forward Area Air Defense Ground Based Sensor at WSMR, Improved Cargo Helicopter at ATTC, EH-60 QUICKFIX at WSMR, 2-12 Ton, 5 Ton, and HMMWV Extended Service Life Program at ATC, MI Breacher at ATC, Includes funding for workforce reduction commensurate with test workload. Advanced Field Artillery Tactical Data System (AFATDS) at YPG, Land Warrior at ATC and YPG, and 10 Ton Recovery Truck (8X8) at ATC. Airborne Engineering Evaluation Support Activity (AEESA) Ariborne Engineering Evaluation Support Activity (AEESA) Modernization of test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.	Verification and test operations. Some of the many structures at ATC, Artillery Systems Dem/Val DMANCHE Helicopter subsystems at YPG and Structures at ATC, Artillery Systems Dem/Val DMANCHE Helicopter subsystems at YPG and sicles (4X4) at ATC, Army Tactical Missile Systic Systems and Theater Area Hi uided Submunition (BAT) at WSMR and RTTC ehicle at ATC, Improved Target Acquisition Systic Guided Missile (EFOG-M) at RTTC and WS at ATTC, Forward Area Air Defense Ground Ba Ton, 5 Ton, and HMMWV Extended Service Life at YPG, Land Warrior at ATC and YPG, and 10 ith test workload. A)	ajor systems to be tested include: lose Combat Tactical Trainer (CCTT) at (Crusader) at YPG, LONGBOW Aviation Technical Test Center (ATTC), em (ATACMS) Block IA and II at WSMR, gh Altitude Area Defense at WSMR, Mine , Multiple Launch Rocket System (MLRS) stem/TOW missile at RTTC, Follow-on to MR, Aircraft Survivability Equipment at sed Sensor at WSMR, Improved Cargo ie Program at ATC, M1 Breacher at ATC, Ton Recovery Truck (8X8) at ATC.
Project DF30	Pa	Page 4 of 20 Pages	Exhibit R-2 (PE 0605601A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFICATIO	N SHEET	R-2 Exhib	it)	DATE Febru	February 1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605601A Army	отпе Army Test	D TITLE Army Test Ranges and Facilities		PROJECT DF30
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 0 0	EY 1997 0	FY 1998 0 119728	FY 1999 0 126953		
Change Summary Explanation: Funding: This is a new project combining the prior individual projects for each TECOM test center and the TECOM HQ integrated test planning and safety assessment/verification functions. The funds shown represent no substantial change from the prior total guidance for all test projects in FY 98, less the realignment of the independent assessment function to D699 (+2371 in FY 98 and +1937 in FY 99). Remaining increase represents modernization requirements to meet documented workload changes driven by the funding profiles of DoD development and acquisition programs.	ndividual projects for represent no substant 371 in FY 98 and +19 g profiles of DoD dev	each TECOM te ial change from 1 37 in FY 99). Re elopment and acc	st center and the the prior total gui emaining increase quisition program	TECOM HQ integidance for all test per represents moder is.	grated test planning a projects in FY 98, les mization requiremen	and safety ss the realignment ts to meet
Project DF30	Page	Page 5 of 20 Pages		Ex	Exhibit R-2 (PE 0605601A)	301A)
		1115				Item 114
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	ritle Irmy Test	t Ranges	and Fac	ilities		PROJECT DE90
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE90 Yuma Proving Ground	19988	17054	0	0	0	0	0	0	0	37042

and report the results of development and other tests of aircraft armament, long-range cannon artillery, air delivery, and mobility systems. Major facilities include an artillery and tropic) with no change in physical locations (tropic testing will continue in Panama and cold weather testing in Alaska), but with reduced management and manpower to A. Mission Description and Justification: Project DE90 Yuma Proving Ground: Yuma Proving Ground (YPG), AZ is DoD's primary artillery, air delivery and desert firing range; Army's only air-to-ground aircraft armament range with precision real-time instrumentation; the Army's only weapons accuracy range with actual targets for under the Base Realignment and Closure Act (BRAC). Effective with FY 95, YPG assumed management of all extreme natural environment testing (desert, cold weather, test range. Vast tracts of varied desert terrain provide testers with conditions found in the Middle East and other desert areas. YPG's mission is to plan, conduct, analyze, systems and materiel in full operation and the man/materiel interface as well as the performance of extreme cold weather specific equipment. It also provides for leverage, testing direct fire aircraft and weapons; an instrumented air delivery test area; and desert and dust mobility test areas. YPG is designated as the DoD primary test site for munitions and a specialty site for land vehicle testing. YPG assumed the full munitions production acceptance testing mission from Jefferson Proving Ground in FY 95 support streamlined test operations. Cold Regions Test Activity (CRTA), Fort Greeley, AK is the only cold region environmental test center within DoD. This program includes support of development and production acceptance testing to determine the effects of extreme cold weather, wind, and snow on the performance of weapons electromagnetic/electrothermal gun systems under Project Reliance. Under Reliance, YPG is also designated as the primary site for the conduct of indirect fire gun integration and use of virtual and synthetic test tools/capabilities for reduction of test costs and program acquisition costs.

FY 1996 Accomplishments:

Survivable Tire Test, CRUSADER Field Artillery System, C17 Aircraft - Army Interface, VOLCANO Mine, and USMC Light Armored Vehicle. Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations. Some of the largest system level programs tested were: Total

FY 1997 Planned Program:

Key test programs are: COMANCHE, 2nd Generation FLIR, Ground Combat Identification, Air Drop Equipment Advanced Developments, Aircraft Survivability Equipment, CRUSADER Field Artillery System (AFAS), and Field Artillery Resupply Vehicle (FARV) Advanced Development. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations.

Total 17054

Project DE90

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Exhibit R-2 (PE 0605601A)

RDT&E BUDGET ITEM JUSTIFICATION		February 1997
	PE NUMBER AND TITLE	PROJECT
6 - Management and Support	0605601A Army Test Ranges and Facilities	DE30

FY 1998 Planned Program: Project consolidated under project DF30.

FY 1999 Planned Program: Project consolidated under project DF30.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	22185	17418	15560	17305	
Appropriated Value	22801	17054			
Adjustments to Appropriated Value	-2813				
FY 1998 Pres Bud Request	. 88661	17054	0	0	

Change Summary Explanation:
Funding: FY 1996 decreased (-2813); (-692) for undistributed Congressional reductions and rescissions; and (-2121) reprogrammed to fund higher priorities.
Project consolidated under project DF30 effective FY 1998.

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Project DE90





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	-2 Exhil	bit)		DATE Fel	February 1997	76(
BUDGET ACTIVITY 6 - Management and Support)90 000	PE NUMBER AND TITLE 0605601A Army	PENUMBER AND TITLE O605601A Army Test Ranges and Facilities	t Ranges	and Fac	ilities		PROJECT DE91
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE91 Aberdeen Test Center	34138	34436	0	0	0	0	0	0	0	68574

commensurate with the T&E workload. It also provides for leverage, integration and use of virtual and synthetic test tools/capabilities for reduction of test costs and program equipment; and troop support and individual equipment. ATC is the DoD tester for vulnerability/lethality of Army systems. Major facilities include the Munson automotive designated as primary test site for land vehicle and direct fire gun munitions testing. ATC is responsible for conducting development tests of weapons and weapon systems; test courses, firing ranges addressing a wide variety of firing capabilities, cross-country automotive test sites, a unique robotics vehicle test facility, moving target projection facility, live fire evasive target, armor/anti-armor depleted uranium containment facility (Super Box), the elevated rail threat launch facility, underwater test facility for the Aberdeen Proving Ground, MD is DoD's designated lead agency for land vehicle testing and Congressionally mandated live fire testing. Under Project Reliance, ATC is munitions and components; survey and target acquisition equipment; combat, special, and general purpose vehicles and ancillary automotive equipment; combat engineer conduct of tests for surface and subsurface ship structures (Navy support), and a number of special test laboratories. Includes personnel costs to downsize the workforce A. Mission Description and Justification: Project DE91 Aberdeen Test Center: Aberdeen Test Center (ATC), formerly known as Combat Systems Test Activity,

FY 1996 Accomplishments:

M1A2 ABRAMS Tank, Armored Gun System Closeout Testing, 120mm Mortar System, BRADLEY Fighting Vehicle System, and Navy Ship Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations. Some of the largest systems level programs tested were: Structures Program.

1145 Personnel downsizing costs.

Total 34138

FY 1997 Planned Program:

Advanced Tank Armaments, M1A1 Block Improvement Program, Ground Combat Identification, M1A2 ABRAMS Tank, Halon Substitutes for institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, Automatic Fire Extinguishers, and SEA WOLF Hull Structure Shock Tests. environmental, efficiency, and technological aspects of test operations. Some of the systems programmed for testing are:

Total 34436

Project DE91

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		February 1997
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management and Support	0605601A Army Test Ranges and Facilities	

FY 1998 Planned Program: Funding consolidated under project DF30.

FY 1999 Planned Program: Funding consolidated under project DF30.

B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 36378 37388 -3250	FY 1997 35172 34436	<u>FY 1998</u> 34161	FY 1999 34790	
FY 1998 Pres Bud Request	34138	34436	0	0	

Change Summary Explanation: Funding consolidated under project DF30 effective FY 1998.

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Project DE91



RDT&E BUDGET ITEM JU	EM JUS	TIFICA	TION SI	STIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE FeI	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 6 0	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	ппе rmy Tes	t Ranges	and Fac	ilities		PROJECT DE92
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE92 Dugway Proving Ground	12508	0	0	0	0	0	0	0	0	12508

under Project Reliance for Chemical/Biological defense testing. This project provides for maintaining a capability for development, production, and product improvement A. Mission Description and Justification: Project DE92 Dugway Proving Ground: Dugway Proving Ground (DPG), UT, is the DoD designated primary test facility tests of chemical/biological defense systems and smoke munitions systems; battle field obscurant/smoke testing; and chemical biological defense (CBD) support for DoD agencies and treaty compliance. Effective with FY 1997, this project was transferred to DoD (PE 0605384BP) in accordance with PL 103-160. It also provides, within mission area, for leverage, integration and use of virtual and synthetic test tools/capabilities for reduction test and program acquisition costs.

FY 1996 Accomplishments:

- Some of the largest system level programs tested were:
- Joint Chemical Biological Contact Point and Test, Chemical Warfare Treaty Support, XM22 Automatic Chemical Agent Alarm, Advanced Chemical/ Biological Battledress Overgarment, and M56 Smoke Generating System.
 - Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety,
 - environmental, efficiency, and technological aspects of test operations.
 - Personnel downsizing costs 1097
 - 12508 • Total
- FY 1997 Planned Program: Project transferred to DoD effective FY 1997.
- FY 1998 Planned Program: Project transferred to DoD effective FY 1997.
- FY 1999 Planned Program: Project transferred to DoD effective FY 1997

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	13302	0	0	0
Appropriated Value	13671			
Adjustments to Appropriated Value	-1163			
FY 1998 Pres Bud Request	12508	0	0	_

Change Summary Explanation: Funding: Project transferred to DoD PE 0605384BP, Chemical and Biological Defense Program, effective FY 1997

Project DE92

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FM JUS	TIFICA.	TION S	HEET (R	1-2 Exhi	bit)		DATE FeI	February 1997	160
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 90	PE NUMBER AND TITLE 0605601A Arm)	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	t Ranges	and Fac	ilities		PROJECT DE93
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE93 White Sands Missile Range	55176	59945	0	0	0	0	0	0	0	115121

designated primary test facility for overland surface-to-air and surface-to-surface missile testing and nuclear effects under Project Reliance. Launch complexes are integrated A. Mission Description and Justification: Project DE93 White Sands Missile Range: White Sands Missile Range (WSMR), NM, is the largest, multi-purpose, overland data bases at EPG for standard tactical deployment scenarios for electromagnetic capability and vulnerability will be continued. It also provides for leverage, integration and compact antenna range, high frequency test facility, stress loading facility, and an electro-optical systems test facility. The mission of creating, developing, and maintaining landlocked/secure test missile flight facility. WSMR facilities and services are extensively utilized by the Tri-Services, National Aeronautics and Space Administration, and other government agencies and includes support to the High Energy Laser Systems Test Facility located at WSMR. Effective FY 95, management of the Electronic Proving Ground (EPG), Fort Huachuca, AZ (DE94) was consolidated under WSMR. EPG is unique within DoD because of the electromagnetically "clean" environment, extensive intelligence, and electronic warfare equipment and systems. EPG operates an electro-magnetic environment test facility, an unmanned aerial vehicle test facility, antenna pattern measurement facility, Electro-Magnetic Interference (EMI)/Electro-Magnetic Compatibility (EMC)/TEMPEST test facility, communication test facility, outdoor test range within DoD. This project provides for testing of ballistic and guided missiles, air defense systems, and artillery missile systems for all services. It is the DoD into a modern, real-time data collection and data reduction processing system. Facilities include optical and calibration laboratories, inertial guidance test facilities, full real estate, low annual rainfall, and special facilities required to perform development tests for communications, command and control, optical/electro-optical, signal spectrum nuclear effects facilities (i.e., radiation, thermal, blast, electromagnetic pulse), temperature, shock, vibration, and electromagnetic effects, and a fully ase of virtual and synthetic test tools/capabilities for reduction of test and program costs.

FY 1996 Accomplishments:

PATRIOT Missile System, Theater High Altitude Area Defense (THAAD), Theater Missile Defense (TMD), Army Tactical Command & Control System (ATCCS), and Multiple Launch Rocket System. Some of the largest system level programs tested were:

Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety,

environmental, efficiency, and technological aspects of test operations. 55176

Total

Project DE93

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

6 - Management and Support **BUDGET ACTIVITY**

0605601A Army Test Ranges and Facilities PE NUMBER AND TITLE

PROJECT February 1997

DATE

DE93

Some of the key systems programmed for testing are: FY 1997 Planned Program: 59945

Theater Missile Defense/Theater High Altitude Area Defense, PATRIOT Advanced Configuration,

STINGER Product Improvement, BAT Pre-Planned Product Improvements, All Source Analysis System (ASAS) Evolutionary Developments, Command and Control Vehicle, Navy STANDARD Missile, Navy Research Rockets, and Air Force AMRAAM.

Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety,

environmental, efficiency, and technological aspects of test operations.

59945 Total FY 1998 Planned Program: Funding consolidated under project DF30.

FY 1999 Planned Program: Funding consolidated under project DF30.

18 FY 1999 57878			0
Z FY 1998 3 57883			5
5 FY 1997 5 61233			5 59945
FY 1996 51766	5320	+197	5517
B. Project Change Summary FY 1997 President's Budget	Appropriated Value	Adjustments to Appropriated Value	FY 1998 Pres Bud Request

Change Summary Explanation: Funding consolidated under project DF30 effective FY98.

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE NI 090	PE NUMBER AND TITLE 0605601A Army	E NUMBER AND TITLE JEOST RANGES AND FACILITIES	t Ranges	and Fac	ilities	1	PROJECT D618
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D618 Aviation Technical Test Center	14369	12557	0	0	0	0	0	0	0	26926

DoD's only helicopter icing spray capability and low speed, fixed wing cloud physics instrumented aircraft which provide for qualification of helicopters for flight under icing Fleet Aircraft Sustainment Testing (FAST) is also conducted to provide continuous reliability/supportability data on new and modified aircraft systems/subsystems. Operates A. Mission Description and Justification: Project D618 Aviation Technical Test Center: Aviation Technical Test Center (ATTC), Fort Rucker, AL provides a capability modification of airframes and installation of night vision systems. It also provides for leverage, integration and use of virtual and synthetic test tools/capabilities for reduction for development, production, verification, and materiel change testing of Army aircraft, Aircrew systems/subsystems, and various items of related ground support equipment. conditions. Also funds the Airborne Engineering Evaluation Support Activity (AEESA) at CECOM which includes night vision research, aircraft modeling, flight support, of test and program acquisition costs.

FY 1996 Accomplishments:

- Institutional funds were also used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, UH-1H Helicopter, OH-58D KIOWA Warrior, COMANCHE, Lead-the-Fleet, and Special Operations Aircraft. Some of the largest system level programs tested were:
 - Personnel and other one time costs associated with downsizing and consolidation. environmental, efficiency, and technological aspects of test operations.

4369

FY 1997 Planned Program:

- COMANCHE Subsystems, Aircraft Survivability Equipment, 2nd Generation FLIR, CH-47D Product Improvements, and Aircraft Avionics. Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, environmental, efficiency, and technological aspects of test operations. Some of the key systems programmed for testing are:

 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 519 307 12557 Total

FY 1998 Planned Program: Project not funded in FY 98

Project D618

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIO	ON SHEET	(R-2 Exhib	it)	DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605601A Army	AD TITLE Army Test	Army Test Ranges and Facilities		PROJECT D618
FY 1999 Planned Program: Project not funded in FY 99.	.60					
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 14033 14424	FY 1997 12826 12557	FY 1998 9074	FY 1999 8659		
FY 1998 Pres Bud Request	14369	12557	0	0		
Change Summary Explanation: Funding consolidated into project DF30 effective FY 1998.	io project DF30 effectiv	e FY 1998.				
Tigger Pore	rag	rage 14 of 20 rages		IX.	Exhibit R-2 (PE 0605601A)	
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RD	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	TION SH	HEET (R	-2 Exhil	oit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support	and Support			PE NU 060	PE NUMBER AND TITLE 0605601A Arm)	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	Ranges	and Fac			PROJECT D630
COST	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D630 TECOM Test Design and Evaluation	n and Evaluation	3871	4685	0	0	0	0	0	0	0	8556
A. Mission Description and major systems. It encompasses support of all acquisition mile assessment plans and reports equipment, bridging, clothing safety assessment/verification FY 1996 Accomplishments: 2206 Contin	A. Mission Description and Justification: Project D630 TECOM Test Design and Evaluation: This project provides for independent aassessment of over 300 non-major systems. It encompasses design of developmental and initial production assessment plans, test design, and absequent independent analysis and assessment reports in support of all acquisition milestones to include recommendations for type classification and materiel release of non-major systems. Includes some 125-150 independent aassessment plans and reports annually in the areas of munitions, weapons, electronics, communications, electronic warfare training devices, automotive and engineering safety assessment plans and reports annually in the areas of munitions, weapons, electronics, communications devices, automotive and engineering equipment, bridging, elothing and individual equipment and chemical detection alarms and protection equipment. It also provides for HQ TECOM's test management, asafety assessment plans and reports annually in the areas of munitions, weapons, electronics, communication and, in FY97, Test Integration functions in support of the Army's new Integrated T&E process. FY 1996 Accomplishments: - Close Combat Tactical Trainer - Joint Tactical Ground Station - Combat Service Support Training System - Land Warrior - Individual Soldier Enhanced Ration - Advanced Combat Velicie Crewman Helmet - Advanced Combat Velicie Crewman Helmet - Truck, 2-1/2 Ton Extended Service Program - Truck, 2-1/2 Ton Extended Service Program	ntal and initi mendations, went and chem egration func ssment progra al Trainer I Station oort Training Sight Syster unications Syster Unications Syster Environmen Hanced Ratic	JM Test De al production for type clas reapons, elec itical detectio tions in supp am, address system an to tal tal Protectio n an Helmet	sign and Evariance is sification an stronics, comen and alarms and sort of the Auing new devented in (TAP) Sui	aluation: This prablans, test design, d materiel release numunications, elect d protection equipramy's new Integral Inflatable Body Digital Topograp Driver's Vision Launched Grap Heavy Assault I Vapor Protective C-17 Transport, Biological Poin It Automatic Che Force Provider Truck, 2-1/2 T	luation: This project provides for independent alms, test design, and subsequent independent amateriel release of non-major systems. Include nunications, electronic warfare training devices protection equipment. It also provides for HQ 'iy's new Integrated T&E process. Inflatable Body and Head Restraint System Driver's Vision Enhancer Launched Grapnel Hook Heavy Assault Bridge System Vapor Protective Flame Resistant Undergarm C-17 Transport, Army Interface Biological Point Detector Automatic Chemical Agent Alarm Force Provider Truck, 2-1/2 Ton Extended Service Program	rovides for ubsequent in imajor syste warfare trail. It also provite process. The process ook to system the Resistant Interface ctor Agent Alar tended Serventered Serventended Serventende	independent ams. Includ ning devices ides for HQ changes. Pr tt System am/Quick Ru m ice Program	uation: This project provides for independent assessment of over 300 meateriel release of non-major systems. Includes some 125-150 independunications, electronic warfare training devices, automotive and engineer protection equipment. It also provides for HQ TECOM's test managementy's new Integrated T&E process. Inflatable Body and Head Restraint System Digital Topographic Support System/Quick Response Multicolor Printer Driver's Vision Enhancer Launched Grapnel Hook Heavy Assault Bridge System Vapor Protective Flame Resistant Undergarment (JSLIST) C-17 Transport, Army Interface Biological Point Detector Automatic Chemical Agent Alarm Force Provider Truck, 2-1/2 Ton Extended Service Program	of over 300 assessment 1-150 indeper and engine sst managem ticolor Print	non- reports in ndent ering tent,
• 1665 Te	Test management and safety assessment/verification	ssessment/ve	rification								

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Project D630



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	2-2 Exhibi	t) DATE February 1997	
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605601A Arm)	TITLE Vrmy Test F	PENUMBER AND TITLE 0605601A Army Test Ranges and Facilities D6	PROJECT D630
Planned Program: Aviation Combined Arms Tactical Trainer Army Key Management System Artical Standoff Biological Detector Air Warrior Air Warrior Close Combat Tactical Trainer Close Combat Tactical Trainer	new developments, p Air' Mol Joir Con Rem Ha Sele Mult	its, production, and mad Air Traffic Navigation Mobile Automated Ins Joint Service Lightwei Containerized Kitchen Remote Activation Mur Handheld Mine Detec Selectable Lightweight Multiple Integrated Las IEW Common Sensor	nts, production, and materiel changes. Programmed items include: Air Traffic Navigation and Communication System Mobile Automated Instrumentation Suite Joint Service Lightweight Integrated Suit Technology (JSLIST) Containerized Kitchen Remote Activation Munitions System Handheld Mine Detection System Selectable Lightweight Attack Munition Multiple Integrated Laser Engagement System - 2000 IEW Common Sensor	
 2310 Integrated test planning and safety assessment/verification 54 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs Total 4685 	nology Transfer (SBI	R/STTR) Progi	rams	
FY 1998 Planned Program: Project not funded in FY 98				
FY 1999 Planned Program: Project not funded in FY 99				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriate Value FY 1998 Pres Bud Request 3871	1996 FY 1997 4623 4785 4753 4685 -882 4685 3871 4685	FY 1998 4937	FY 1999 5094 0	
Change Summary Explanation: Funding: FY 1996 decreased (-882); (-130) undistributed Congressional reductions and rescissions; and (-752) reprogrammed to fund higher priorities. FY 1998 - The test design and assessment portion of this project (-2371) was realigned to project D699 upon the transfer of the Test Design and Evaluation function to the US Army Operational Test and Evaluation Command. The remaining portion of this project (-2566), which supports HQ TECOM integrated test planning and safety assessment/verification functions, was consolidated into project DF30 effective FY 1998. FY 1999 - These efforts transferred to projects D699 and DF30 (-5094).	reductions and resci ct (-2371) was realig luation Command. T ation functions, was	ssions; and (-7.5 ned to project I he remaining p consolidated in	52) reprogrammed to fund higher priorities. 2699 upon the transfer of the Test Design and portion of this project (-2566), which supports HC to project DF30 effective FY 1998.	~
Project D630	Page 16 of 20 Pages		Exhibit R-2 (PE 0605601A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	ritle Irmy Tesi	t Ranges	and Fac	ilities		PROJECT D632
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D632 Redstone Technical Test Center	2644	1545	0	0	0	0	0	0	0	4189

technical test expertise, facilities and capabilities for conduct of research, development, production and post-production testing of missiles, rockets, and low energy/precision associated equipment. RTTC is the Army lightning tester for hazardous/explosive materials. Major capabilities include a) extensive component/subsystem test facilities, b) storage sites around the world. Through stockpile reliability testing, missile shelf life extension has resulted in cost avoidance greater than \$7.9 billion. It also provides for environmental effects testing. RTTC is the Product Assurance tester for the Army's Missile Command for repair parts testing and evaluating missile stockpile reliability at ranges for flight testing small missiles and evaluating warhead effects, c) rocket motor static test stands, and d) facilities for climatic, vibration, shock, and electromagnetic A. Mission Description and Justification: Project D632 Redstone Technical Test Center: Redstone Technical Test Center (RTTC), Redstone Arsenal, AL provides guidance lasers. RTTC conducts system level tests on small rockets and missiles and component/subsystem tests for all categories of Army rockets, guided missiles, and leverage, integration and use of virtual and synthetic test tools/capabilities for reduction of test and program acquisition costs.

FY 1996 Accomplishments:

Some of the largest system level programs tested are:

JAVELIN, Missile Repair Parts, TOW Improved Target Acquisition System, Air to Ground Missile System, and Multiple Launch Rocket System.

2644 Total

FY 1997 Planned Program:

Some of the key systems programmed for testing are:

Unmanned Ground Vehicle, Brilliant Anti-Armor Submunition (BAT), MLRS Family of Munitions, PATRIOT Advanced Configurations, Army Institutional funds are also to be used to modernize test facilities and equipment to maintain current test capabilities and improve the safety, Tactical Missile System Block Improvements, JAVELIN, TOW missile and target acquisition systems, and Missile Repair Parts.

environmental, efficiency, and technological aspects of test operations.

1545 Total

FY 1998 Planned Program: Funding consolidated under project DF30.

FY 1999 Planned Program: Funding consolidated under project DF30.

Project D632

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605601A Army	oπ⊓LE Army Testl	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	Facilities	PROJECT D632
B. Project Change SummaryFY 1996FY 1997 President's Budget1060Appropriated Value1090Adjustments to Appropriated Value+1554FY 1998 Pres Bud Request2644	FY 1997 1578 1545 1545	FY 1998 1178	<u>FY 1999</u> 1591		
Change Summary Explanation: Funding: FY 1996 increased (+1554) for reprioritization of the Army's modernization programs and development of the Virtual Proving Ground. Project consolidated into project DF30, effective FY 1998.	y's modernization prc ctive FY 1998.	grams and devel	opment of the		
			,		
Project D632	Page 18 of 20 Pages		Õ	Exhibit R-2 (PE 0605601A)	(4)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605601A Army Test Ranges and Facilities	пте rmy Test	t Ranges	and Fac	ilities	d LI	РRОЈЕСТ D699
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D699 Non-Major Systems Test Design & Evaluation	0	0	2389	1966	1496	1522	1550	1581	1581 Continuing Continuing	Continuing

Independent Test Design and Assessment effort previously funded in project D630 and realigned to US Army Operational Test and Evaluation Command (OPTEC) as part independent evaluations of all acquisition milestones to include recommendations for type classification and materiel release of non-major systems. Evaluation results will A. Mission Description and Justification: Project D699, Non-Major Systems Test Design and Evaluation: This is not a new start. It is the continuation of the of the Army's consolidation of the materiel evaluation mission. Project D699 provides for independent developmental evaluation of all Army non-major systems. project supports integrated Army evaluation for decision makers at milestone reviews, includes the development of test design, evaluation plans, and subsequent be incorporated into a single Army evaluation and presented at all acquisition milestones.

FY 1998 Planned Program:

- 2389 Continue test design and evaluation programs, addressing new developments, production, and materiel changes. Programmed items include: Suite of Integrated Radio Frequency Countermeasures
 - Non-Lethal Ammo Family
- TRAILBLAZER
- Air Warrior
- Modular Body Armor
- Joint Biological Detector

Counter Proliferation Long Range Biological Standoff Detector Armored Security Vehicle

Sorbont Decontamination System

Mounted Warrior

FY 1999 Planned Program:

Total

- Continue test design and evaluation programs, addressing new developments, production, and material changes. Programmed items include: Special Driver's Air Support System
 - WARSIM 2000 Simulation
- Special Operations Forces Demolition Kit
- Advanced Integrated Collective Protection System Modular Decon System
 - Joint Biological Detector

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Project D699

Exhibit R-2 (PE 0605601A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIC	N SHEET	(R-2 Exhib	it)	DATE February 1997	20
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605601A Arm)	D TITLE Army Test	PENUMBER AND TITLE 0605601A Army Test Ranges and Facilities		РКОЈЕСТ D699
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value 	FY 1996 0 0	FY 1997 0	FY 1998 0	FY 1999 0		
FY 1998 Pres Bud Request	0	0	2389	1966		
Change Summary Explanation: Funding: Reflects realignment of the test design and assessment function from project D630.	ment of the test design	and assessment fi	unction from proj	ect D630.		
Project D699	Pag	Page 20 of 20 Pages		ÚÌ,	Exhibit R-2 (PE 0605601A)	
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BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Ins	PE NUMBER AND TITLE 0605602A Army Instrumentation	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	t Techno	logy and	Sustaini		PROJECT D628
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D628 Test Technology & Sustaining Instrumentation	25422	21944	33184	32976	34373	35189	35121	36322	Continuing	36322 Continuing Continuing

Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; White Sands Missile Range (WSMR), NM; Redstone Technical Test Center (RTTC), AL; and instrumentation, as well as incremental upgrades of instrumentation and software, to assure adequate test data for acquisition milestone decisions for projects such as Patriot Advanced Capability Phase 3 (PAC 3), MIA2 Main Battle Tank, Joint Service Lightweight Integrated Suit Technology (JSLIST), Crusader, the Theater High Altitude Area Defense (THAAD), Comanche and Javelin. Funding increase in FY 1998 and FY 1999 is to fully implement the TECOM Virtual Proving Ground (VPG). This innovative A. Mission Description and Budget Item Justification.: Project D628 - Test Technology & Sustaining Instrumentation: Test technology provides critical front-end envelope of information to reduce risk and reduce acquisition costs. This initiative is critical to achieving long term efficiencies not only within the T&E mission to offset Acquisition Streamlining Initiative in testing will significantly improve the ability of the Army to provide early influence on system design, reduce test costs, extend the efforts for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced capabilities. Sustaining instrumentation maintains existing technical testing capabilities at TECOM test facilities by replacing unreliable, uneconomical and irreparable instrumentation prototypes for US Army Test and Evaluation Command (TECOM) which includes: Yuma Proving Ground (YPG), AZ; Aberdeen Test Center (ATC), funding and manpower but also within the acquisition process at large. Includes research and development effort directed toward support of installations or operations Aviation Technical Test Center (ATTC), AL. Within this element, a major initiative is directed towards efficiency and covers downsizing offsets, and virtual test required for general research and development use and therefore is appropriate to Budget Activity 6.

FY 1996 Accomplishments:

- instrumentation technology developments and maintained and improved existing capability by replacement and limited upgrade of worn out, obsolete at Aviation Technical Test Center (ATTC)). Developed prototype instrumentation (such as the development of the Bridge Crossing Model capability or unserviceable equipment/instrumentation at Army technical test ranges (such as bulky, obsolete airborne data recorders used for helicopter testing to ensure quality and consistency of test results throughout Army and for international cooperative applications, developed prototype instrumentation 1484 Provided quick reaction capability to respond to failed instrumentation replacement needs, provided support for technical committees forging future for development of new technologies. Continued to develop test operations procedures (TOPs) and international test operations procedures (ITOPs) at Aberdeen Test Center (ATC) which will be used to evaluate system performance without risk to testers) and performed advanced concept studies and performed advanced concept studies for development of new technologies. Continued support of TECOM Virtual Proving Ground (VPG): 8819
 - Aviation Technical Test Center (ATTC): Developed integration of aircraft, terrain and targeting models in support of aviation survivability Aberdeen Test Center (ATC): Developed databases and detailed models and systems interfaces to link VPG tools with legacy systems.

Project D628

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Exhibit R-2 (PE 0605602A)

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		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Managen	_{ЮІТҮ} gemel	BUDGET ACTIVITY 6 - Management and Support	PENUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT d Sustaining D628
FY 1996 Ac	ccompli	FY 1996 Accomplishments: (continued) Dugway Proving Ground (DPG): Began development of t	gan development of the plan to identify requirements for the VPG training program for the command and developed software to be used for chemical biological/aerosol testing.	ogram for the command and
74. 75		Redstone Technical Test Center (RTTC): Acquired the calculation of closed loop not initiated develored to real-time flight	Acquired the capability to support virtual component/subsystem tests for IR Sensors with open loop and closed loop non-destructive testing of imaging IR Seekers, night sights and all-up-round missiles. Initiated development of the virtual range (launch conditions engagement scenarios, target dynamics, real-time flight or vehicle dynamics and operational environments).	IR Sensors with open loop and and all-up-round missiles. ent scenarios, target dynamics,
		White Sands Missile Range (WSMR): Initiated the development of mission planning & real-time data analysis capability. Developed ground truth database missile testing, and developed the capability to evaluate Low Cost Competent Munition of Marian and integration.	itiated the development of mission planning & real-time data analysis capability. Developed ground truth database missile testing, and developed the capability to evaluate Low Cost Competent Munitions.	ability. Developed ground w Cost Competent Munitions.
•	301	Developed and acquired additional Flight Test Cockpit Indicators and replaced a telemetry antenna and controller which were destroyed by lightning at ATTC.	licators and replaced a telemetry antenna and controller	which were destroyed by lightning
•	1386	Continued to acquire high-speed, multi-media data handling equipment, developed test methodology and requirements/specifications for instrumentation used for combat vehicle testing, such as the MIA2, Crusader and Component Advanced Technology Demonstrator (CAT-D) at ATC. These processes are needed to accommodate pending reductions in the workforce.	g equipment, developed test methodology and requirem e M1A2, Crusader and Component Advanced Technoloctions in the workforce.	ents/specifications for gy Demonstrator (CAT-D) at ATC.
•	1037	Continued to replace chemical/biological laboratory analys	laboratory analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission at	emical (NBC) Defense mission at
•	5070	oleted the acquisition of the capabil MR C4I Directorate. Continued to dar tracking systems, and replaced less increased data rate and reduces	ity to test advanced Command, Control, Communication and Intelligence Systems of future weapon system acquire instrumentation to ensure personnel safety and compliance with EPA Regulations, sustain optical the obsolete Telemetry Tracking and Acquisition Systems (TTAS) with new state-of-the art systems which the number of personnel required to operate the instrumentation at WSMR	Systems of future weapon systems:PA Regulations, sustain optical sw state-of-the art systems which
•	1780	Completed the acquisition of Subsystem Test Facility which provides high fidelity models to test small missile weapon systems. Began development of a vibro-acoustic flight capability which produces dynamically accurate missile flights necessary to reduce the number of costly missile test flights. Continued the fabrication of the Thermal Ablative Test Stand used to characterize materials in advanced missile systems at RTTC.	th provides high fidelity models to test small missile were nically accurate missile flights necessary to reduce the nind used to characterize materials in advanced missile sy	pon systems. Began development umber of costly missile test flights. stems at RTTC.
•	1002	Acquired Tank Accuracy Real Time Processing instrumentation, continued the refurbishment of Climatic Chambers which brought them into EPA compliance and upgraded the Kineto Tracking Mounts at Yuma Proving Ground (YPG). Procured a Millimeter Wavelength Transmissometer, Telephoto Lenses and other cold weather instrumentation at YPG Cold Regions Test Activity (CRTA).	tation, continued the refurbishment of Climatic Chamber (uma Proving Ground (YPG). Procured a Millimeter W YPG Cold Regions Test Activity (CRTA).	s which brought them into EPA avelength Transmissometer,
•	4543	Provided technical support costs to include salaries and benefits, travel, training and developmental assignments for Directorate for Technical Missipersonnel, who managed requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central	le salaries and benefits, travel, training and developmental assignments for Directorate for Technical Mission velopment, project prioritization, and execution of investment accounts for Small Business Innovative y Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central	Directorate for Technical Mission or Small Business Innovative tion Investment, and the Central
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE Fehrijary 1997
BUDGET ACTIVITY 6 - Managen	<u>ē</u>	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	and Sustaining D628
FY 1996 Accompl Total 25422	FY 1996 Accomplishments: (continued) Test and Evaluation Investment Program, totaling \$80-\$100M/yr. Management and support costs also provided direct interface to the T&E Executive Agent, managing needs and solutions calls for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Also provided administrative support for Local Area Network and TECNET, contracts, patents, Symposia and Conferences, exhibits and printing. Continued funding (Army portion) support to Joint Projects Office (JPO) for Test and Evaluation.	MM/yr. Management and support costs also provid se oversight, and supporting the Army TERIB co- e support for Local Area Network and TECNET, o my portion) support to Joint Projects Office (JPO)	ed direct interface to the T&E Executive hair and the Army principal on the T&E ontracts, patents, Symposia and for Test and Evaluation.
FY 1997 Planned Program: • 1423 Provide instrume unservice developr	quick reaction capability to respond ntation technology developments an eable equipment/instrumentation at nent of new technologies. Continue	to failed instrumentation replacement needs, provide support for technical committees forging future and maintain and improve existing capability by replacement and limited upgrade of worn out, obsolete or Army technical test ranges. Develop prototype instrumentation and perform advanced concept studies for to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (TOPs)	chnical committees forging future nited upgrade of worn out, obsolete or perform advanced concept studies for the form of the procedures (TTODE) to the contract of the perform of the procedures of the performance of the pe
7454		throughout Army and for international cooperative applications. ig Ground (VPG): ailed models and system interfaces to link VPG tools with legacy systems. Develop Distributed	ystems. Develop Distributed
	ATTC: Complete integration of aircraft, terrain and targeting models in support of aviation survivability testing DPG: Continue development of software to be used for chemical biological/aerosol testing. Develop a multimedia communications network. RTTC: Continue to acquire the capability to support virtual component/subsystem tests for small missile systems with open loop and closed loop non-destructive testing of imaging IR/MMW Seekers and all-up-round missiles. Complete networking of ground truth databases and the capability to replicate flight dynamic motion environments. WSMR: Develop Virtual test capabilities for C4I systems and continue development of virtual mission planning & real-time data analysis capability. Complete software development for modeling large scale C4I deployments in electromagnetic environments.	Complete integration of aircraft, terrain and targeting models in support of aviation survivability testing ontinue development of software to be used for chemical biological/aerosol testing. Develop a multimedia communications network. Continue to acquire the capability to support virtual component/subsystem tests for small missile systems with open loop and closed loop non-destructive testing of imaging IR/MMW Seekers and all-up-round missiles. Complete networking of ground truth databases and the capability to replicate flight dynamic motion environments. Develop Virtual test capabilities for C4I systems and continue development of virtual mission planning & real-time data analysis capability. Complete software development for modeling large scale C4I deployments in electromagnetic environments.	ting imedia communications network. stems with open loop and closed loop ng of ground truth databases and the ning & real-time data analysis agnetic environments.
• 427	YPG: Develop digital database and graph HQTECOM: Continue VPG design and Continue replacement of Flight Test Cockpit	ites capability for system applications. integration. Indicators and acquire low dynamics Global Positioning System equipment for programs such as	quipment for programs such as
1530	Comanche and Special Ops aircraft at ATTC Continue to acquire high-speed data analysis capability. Acquire range and system safety Continue to replace chemical/biological labo DPG.	and processing equipment. Support for Land Warrior Test Suite, an integrated soldier system test instrumentation at ATC. ratory analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission	in integrated soldier system test Chemical (NBC) Defense mission at
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	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February	1997
BUDGET ACTIVITY 6 - Manageme	вирбет Астіvітү 6 - Management and Support	PENUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	gy and Sustaining	PROJECT D628
FY 1997 Planned F	FY 1997 Planned Program: (continued)			
1897	Continued to modify the WSMR Command Destruct system for remote control capability IAW personnel downsizing and safety assurance initiatives. Continue the design and acquisition of software and hardware to support the Standoff and Tactical Jammer capability for C4I testing. Develop an ungrade to the laser tracking canability at WSMR.	n for remote control capability IAW personnel or are to support the Standoff and Tactical Jammer	ownsizing and safety assurance capability for C41 testing. Dev	initiatives. elop an
• 1310	Continue to upgrade YPG data acquisition, processing and display capabilities for air-to-ground and ground-to-ground armaments testing to include a mobile mission control system.	display capabilities for air-to-ground and groun	-to-ground armaments testing t	o include a
• 925	Continue development of the vibro-acoustic flight capability to produce dynamically accurate missile flights necessary to reduce the number of costly missile test flights. Acquire fiber optics cables for data transfer and communications. Replace solid state power amplifiers used in physical environments testing. Complete the fabrication of the Thermal Ablative Test Stand used to characterize materials in advanced missile systems at RTTC.	y to produce dynamically accurate missile fligh sfer and communications. Replace solid state p mal Ablative Test Stand used to characterize ma	necessary to reduce the numb wer amplifiers used in physica erials in advanced missile syst	er of costly I ems at
5618	e technical support costs to include nel, who manage requirements deve	salaries and benefits, travel, training and developmental assignments for Directorate for Technical Mission elopment, project prioritization, and execution of investment accounts for Small Business Innovative	nts for Directorate for Technic unts for Small Business Innove	al Mission
504	Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program, totaling \$80-\$100M/yr. Management and support costs also provide direct interface to the T&E Executive Agent, managing needs and solutions calls for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Also provides administrative support for Local Area Network and TECNET, contracts, patents, Symposia and Conferences, exhibits and printing. Continues funding support to Joint Projects Office (JPO) for test and evaluation.	y Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central totaling \$80-\$100M/yr. Management and support costs also provide direct interface to the T&E Executive Is for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T&E ides administrative support for Local Area Network and TECNET, contracts, patents, Symposia and inues funding support to Joint Projects Office (JPO) for test and evaluation.	Evaluation Investment, and the direct interface to the T&E chair and the Army principal contracts, patents, Symposia a aluation.	e Central Executive on the T&E nd
Total 21944				
FY 1998 Planned Program: • 1466 Provide	rogram: Provide quick reaction capability to respond to failed instrumentation replacement needs, provide support for technical committees forging future	umentation replacement needs, provide support	or technical committees forgin	o future
	instrumentation technology developments and maintain and improve existing capability by replacement and limited upgrade of worn out, obsolete or unserviceable equipment/instrumentation at Army technical test ranges. Develop prototype instrumentation and perform advanced concept studies for development of new technologies. Continue to develop Test Operations Procedures (TOPs) and International Test Operations Procedures (ITOPs) to ensure quality and consistency of test results throughout Army and for international cooperative applications.	d improve existing capability by replacement an It test ranges. Develop prototype instrumentationst Operations Procedures (TOPs) and Internationmy and for international cooperative application	I limited upgrade of worn out, and perform advanced concernal Test Operations Procedures s.	obsolete or ot studies for (ITOPs) to
15940	Continue support of TECOM Virtual Proving Ground (VPG): ATC: Continue to develop databases, detailed models and system interfaces to include a reconfigurab of ground vehicle systems. Continue development of the Distributed Simulation Architecture.	oving Ground (VPG): detailed models and system interfaces to include a reconfigurable man-in-the-loop testing capability ontinue development of the Distributed Simulation Architecture.	man-in-the-loop testing capab	llity
	ATTC: Complete integration of Comanche aircraft model with ground truth telemetry data for virtual flight visualization testing. DPG: Continue the development of software to be used in support of chemical biological/aerosol testing. Continue development of the multimedia communications network and develop new models for evaluating smoke/obscuration tests.	with ground truth telemetry data for virtual fligl support of chemical biological/aerosol testing. C is for evaluating smoke/obscuration tests.	t visualization testing. ontinue development of the mu	Itimedia
Project D628	P_{c}	Page 4 of 7 Pages	Exhibit R-2 (PE 0605602A))

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997
BUDGET ACTIVITY 6 - Manageme	вирсет Астімітץ 6 - Management and Support	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT D628
FY 1998 Planned	FY 1998 Planned Program: (continued) RTTC: Continue to acquire the capability to support virtua non-destructive testing of imaging IR/MMW Se engagement scenarios, target dynamics, real-tim model small missile mechanical components fit.	 rogram: (continued) RTTC: Continue to acquire the capability to support virtual component/subsystem tests for small missile systems with open loop and closed loop non-destructive testing of imaging IR/MMW Seekers, and all-up-round missiles. Development of the virtual range (launch conditions engagement scenarios, target dynamics, real-time flight or vehicle dynamics and operational environments). Complete the capability to model small missile mechanical components fit and function tests. 	open loop and closed loop al range (launch conditions . Complete the capability to
	WSMR: Complete development of virtual reality mission p capability. Develop terrain and ground truth ds conditions) for the Aerial Cable Facility. Deve Survivability Model for Comanche.	WSMR: Complete development of virtual reality mission planning and continue development of real-time data analyses. Continue C4I testing capability. Develop terrain and ground truth databases, and virtual test capability (computer models used to replicate actual test conditions) for the Aerial Cable Facility. Develop DIS interfaces between test control centers and VPG models. Develop an Airblast Survivability Model for Comanche.	es. Continue C4I testing to replicate actual test odels. Develop an Airblast
	YPG: Continue development of databases and graphics cap line of sight models. HQTECOM: Continue VPG design and integration.	YPG: Continue development of databases and graphics capability. Develop digital mapping and clutter characteristics, aviation fire control and line of sight models. HQTECOM: Continue VPG design and integration.	, aviation fire control and
989		ng and processing equipment. Continue to acquire low dyn	imics GPS equipment at ATTC.
3120	Continue to acquire high-speed analysis and processing equipment. Complete support for Land Warrior Test Suite. system safety instrumentation at ATC.		Continue to acquire range and
• 1130	Continue to replace chemical/biological laboratory analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission at DPG.	instrumentation to sustain the Nuclear, Biological, Chemic	al (NBC) Defense mission at
• 2667	Complete the modification of the WSMR Command Destruct system for remote control capability IAW personnel downsizing and safety assurance initiatives. Continue the design and acquisition of software and hardware to support the Standoff and Tactical Jammer capability for C41 testing.	Complete the modification of the WSMR Command Destruct system for remote control capability IAW personnel downsizing and safety assurar initiatives. Continue the design and acquisition of software and hardware to support the Standoff and Tactical Jammer capability for C4I testing.	nsizing and safety assurance capability for C41 testing.
	Continue the acquisition of environmental monitors for nuclear effects testing, continue the upgrade to the laser tracking equipment, and continue to replace obsolete Telemetry Tracking and Acquisition Systems (TTAS) with new state-of-the art systems at WSMR.	lear effects testing, continue the upgrade to the laser trackin ms (TTAS) with new state-of-the art systems at WSMR.	g equipment, and continue to
1545	Continue to upgrade YPG data acquisition, processing and display capabilities for air-to-ground and ground-to-ground armaments testing to include a mobile mission control system. Acquire ammo conditioning chambers and video equipment for CRTA	display capabilities for air-to-ground and ground-to-ground chambers and video equipment for CRTA	armaments testing to include a
• 1075	Continue development of a vibro-acoustic flight capability to produce dynamically accurate missile flights necessary to reduce the number of costly missile test flights. Acquire fiber optics cables for data transfer and communications. Acquire solid state power amplifiers used in physical	to produce dynamically accurate missile flights necessary to sfer and communications. Acquire solid state power ampli	reduce the number of costly iers used in physical
. 5555	Provide technical support costs to include salaries and benefits, travel, training and developmental assignments for Directorate for Technical Mission personnel, who manage requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Control	fits, travel, training and developmental assignments for Diraprioritization, and execution of investment accounts for Sn and Sustaining Instrumentation Major Test and Evaluation	ctorate for Technical Mission all Business Innovative
	Test and Evaluation Investment Program, totaling \$80-\$100M/yr. Management and support costs also provide direct interface to the T&E Executive Agent, managing needs and solutions calls for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T&E	Myr. Management and support costs also provide direct in eversight, and supporting the Army TERIB co-chair and	terface to the T&E Executive he Army principal on the T&E
Project D628	Pag	Page 5 of 7 Pages Exhibit R	Exhibit R-2 (PE 0605602A)
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		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997	
BUDGET ACTIVITY 6 - Managen	eme	BUDGET ACTIVITY 6 - Management and Support lostrum	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining Instrumentation	PROJECT UStaining D628	t-
FY 1998 Plan	nned I	FY 1998 Planned Program: (continued) Board of Operating Directors. Also provides administrative support for Local Area Network and TECNET, contracts, patents, Symposia and Conferences, exhibits and printing. Provides management and support costs to include salaries and benefits for Directorate for Technical Mission	Local Area Network and TECNET, contracts, osts to include salaries and benefits for Direct	patents, Symposia and orate for Technical Mission	
Total 33	33184	personner, support contracts, patents, exmous and printing			
FY 1999 Planned Program: • 1152 Provide	ned P ₁	Program: Provide quick reaction capability to respond to failed instrumentation replacement needs, provide support for technical committees forging future	olacement needs, provide support for technical	committees forging future	
-	11814		sting capability by replacement and limited up. Develop prototype instrumentation and perfor Procedures (TOPs) and International Test Opeternational cooperative applications.	grade of worn out, obsolete on madvanced concept studies rations Procedures (ITOPs)	or for to
		ATC: Continue to develop databases, detailed models and system interfaces to include a reconfigurable man-in-the-loop testing capability of ground vehicle systems. Continue development of the Distributed Simulation Architecture. ATTC: Continue support of Commanche modeling.	nterfaces to include a reconfigurable man-in-th stributed Simulation Architecture.	e-loop testing capability	
		DPG: Complete development and integration of chem/bio hazard assessment models for Army materiel. Continue development of the multimedia communications network. Continue development of new models for evaluating smoke/obscuration tests. RTTC: Continue to acquire the capability to support virtual component/subsystem tests for small missile systems with open loop and closed loop non-destructive testing of imaging IR/MMW Seekers, and all-up-round missiles. Continue development of the virtual range (launch conditions engagement scenarios, target dynamics, real-time flight or vehicle dynamics and operational environments). Complete	sessment models for Army materiel. Continue odels for evaluating smoke/obscuration tests. subsystem tests for small missile systems with I-up-round missiles. Continue development of flight or vehicle dynamics and operational env	development of the open loop and closed loop the virtual range (launch ironments). Complete	
		development of virtual reality databases to generate digital input images/scenes for IR projection. WSMR: Complete development of virtual reality post mission analysis and 3-D graphic representation. Continue to develop terrain and ground truth databases, continue development of real-time data analyses and virtual test capability (computer models used to replicate actual test conditions) for the Aerial Cable Facility. Continue development of DIS interfaces between test control centers and VPG models.	put images/scenes for IR projection. Ind 3-D graphic representation. Continue to de ses and virtual test capability (computer mode ment of DIS interfaces between test control ce	velop terrain and ground Is used to replicate actual tes nters and VPG models.	***
		YPG: Continue development of VPG databases. Develop digital mapping and clutter characteristics, and aviation fire control and line of sight models. HQTECOM: Continue VPG design and integration.	ing and clutter characteristics, and aviation fire	control and line of sight	
•	752		isors, and front-end data processing equipment	at ATTC.	
• •	1355 1221	Continue to acquire high-speed analysis Continue to replace chemical/biological	and processing equipment. Continue to acquire range and system safety instrumentation at ATC. laboratory analysis instrumentation to sustain the Nuclear, Biological, Chemical (NBC) Defense mission at	nentation at ATC. I (NBC) Defense mission at	
Project D628		DPG. Page 6 of 7 Pages		Exhibit R-2 (PE 0605602A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	t) DATE February 1997	2
ВИВОЕТ АСТІИТУ 6 - Management and Support	nt and Support	PE NUMBER AND TITLE 0605602A Army Instrumentation	ס דותר Army Test 1 ation	PE NUMBER AND TITLE 0605602A Army Test Technology and Sustaining DI Instrumentation	РRОЈЕСТ D628
FY 1999 Planned P	FY 1999 Planned Program: (continued) • 6383 Continue the design and acquisition of software and hardware to support the Standoff and Tactical Jammer capability for C4I testing. Continue the acquisition of environmental monitors continue the ungrade to data analysis and processing equipment acquisition of environmental monitors continue the ungrade to data analysis and processing equipment acquisition of environmental monitors.	ware to support the ade to data analysis	Standoff and Tac	tical Jammer capability for C4I testing. Continuminment acquire the equipment for drone contr	e the
• 1612	integration, and continue to replace obsolete Telemetry Tracking and Acquisition Systems (TTAS) with new state-of-the art systems at WSMR. Continue to upgrade YPG data acquisition, processing and display capabilities for air-to-ground and ground-to-ground armaments testing to include a mobile mission control system. Develop an automated input scoring system for vehicle armaments testing.	racking and Acquisi d display capabilitie put scoring system	tion Systems (T) s for air-to-groun for vehicle arman	AS) with new state-of-the art systems at WSMI and ground-to-ground armaments testing to in nents testing.	olude a
• 2935	Continue development of a vibro-acoustic flight capability to produce dynamically accurate missile flights necessary to reduce the number of costly missile test flights. Acquire an automated data acquisition and distribution capability, and acquire an upgraded laser tracker capability at RTTC. Provide technical support costs to include salaries and benefits, travel, training and developmental assignments for Directorate for Technical Mission	y to produce dynam n and distribution ca nefits, travel, trainin	ically accurate m pability, and acc g and developme	issile flights necessary to reduce the number of quire an upgraded laser tracker capability at RT ntal assignments for Directorate for Technical N	ostly C. ission
·	personnel, who manage requirements development, project prioritization, and execution of investment accounts for Small Business Innovative Research, Production Base Support, Army Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central Test and Evaluation Investment Program, totaling \$80-\$100M/yr. Management and support costs also provide direct interface to the T&E Executive Agent, managing needs and solutions calls for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T&E Board of Operating Directors. Also provides administrative support for Local Area Network and TECNET, contracts, patents, Symposia and Conferences, exhibits and printing. Provides management and support costs to include salaries and benefits for Directorate for Technical Mission personnel, support contracts, patents, exhibits and printing.	ct prioritization, and gy and Sustaining In 00M/yr. Managem nce oversight, and s ve support for Loca t and support costs it.	l execution of invistrumentation, Natrumentation, Nant and support cupporting the Ar I Area Network at include salaries	lopment, project prioritization, and execution of investment accounts for Small Business Innovative Test Technology and Sustaining Instrumentation, Major Test and Evaluation Investment, and the Central otaling \$80-\$100M/yr. Management and support costs also provide direct interface to the T&E Executive for T&E Reliance oversight, and supporting the Army TERIB co-chair and the Army principal on the T& es administrative support for Local Area Network and TECNET, contracts, patents, Symposia and es management and support costs to include salaries and benefits for Directorate for Technical Mission its and printing.	ntral cutive te T&E on
Total 32976	2001 Ad		FV 1000	1000 VT	
B. Project Change Summary FY 97 President's Budget Appropriated Value Adjustments to Appropriated Value	Summary 1720 1 1720 2 1846 2 7 1600 2 7 1600 2 7 1 1720 2 1 1 1720 2 1 1 1720	22413 21944	23621	FY 1999 24624	
FY 1998 Pres Bud Request	equest 25422	21944	33184	32976	
Change Summary Exp (VPG).	Change Summary Explanation: Funding: FY 98/FY 99 increase (+9563) and (-(VPG).	+8352) respectively	required to fully	(+9563) and (+8352) respectively required to fully implement the TECOM Virtual Proving Ground	

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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	197
BUDGE 6 - M	BUDGET ACTIVITY 6 - Management Support			PE NI	PE NUMBER AND TITLE 0605604A Surv	TITLE Survivability/Lethality Analysis	lity/Letha	ality Anal	lysis		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	32250	30675	32330	30678	17036	19427	20161	20961	Continuing	Continuing
D670	Emerging Technology Systems	5153	4776	5278	4759	2583	3055	3171	3298	Continuing	Continuing
D671	Air Defense/Missile Defense Systems	6199	5687	5950	5779	3220	3643	3785	3940	Continuing	Continuing
D672	D672 Aviation Systems	4076	3660	3323	3174	1877	2027	2104	2188	Continuing	Continuing
D675	D675 C4I/IEW Systems	4683	4921	4501	4033	2227	2625	2728	2841	Continuing	Continuing
D677	D677 Ground Combat Systems	2680	5225	5190	5403	2920	3376	3510	3656	Continuing	Continuing
D678	D678 Munitions Systems	5672	5609	5613	5615	3115	3569	3706	3855	Continuing	Continuing
D679	Soldier Systems	787	797	825	735	421	449	463	478	Continuing	Continuing
D734	D734 Survivability Evaluation	0	0	1650	1180	673	683	694	705	Continuing	Continuing

NOTE: This PE has been restructured to reflect consolidation of the Army's materiel evaluation mission under the US Army Operational Test and Evaluation Command (OPTEC). Effective FY 1998, all US Army Research Laboratory (ARL) Survivability/Lethality Analysis Directorate (SLAD) evaluation functions in support of survivability/lethality he financed through the new project D734 under the direction of OPTEC. Project D734 funding was realigned from SLAD projects within this PE.

ethality analyses (SLA) for all major and designated non-major Army systems. The analyses quantify the effects of electronic warfare (EW), ballistic, nuclear, chemical, and environment effects (E3), information warfare (IW), decoys, conventional ballistics and nuclear/biological/chemical (NBC) effects on Army soldiers and systems. The PE equipment and facilities, general management, administrative and contractor support required for program execution. This effort is conducted by the U.S. Army Research Laboratory (ARL) Survivability/Lethality Analysis Directorate (SLAD). This PE supports Headquarters, Department of the Army (HQDA), Program Executive Offices biological battlefield threats and meteorological conditions on Army individual soldiers and systems. The work is accomplished through threat research, theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations. Activities in progress include assessment of the effects of smokes and obscurants, passive countermeasures, tactics, lasers, high-power microwave, electro-optical/radio frequency (EO/RF) jammers, electromagnetic Mission Description and Budget Item Justification: This Program Element (PE) funds activities and functions to conduct objective and integrated survivability and work efforts provide U.S. Army decision makers, materiel and combat developers, system users, and independent evaluators critical soldier and system survivability analyses that quantify the soldier/system's survivability effectiveness in battlefield threat environments. Recommendations are provided to the materiel and combat developers on how to mitigate soldier/system deficiencies and enhance their survivability. This PE funds civilian salaries, travel, development and maintenance of

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Exhibit R-2 (PE 0605604A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1997

6 - Management Support

BUDGET ACTIVITY

PE NUMBER AND TITLE

0605604A Survivability/Lethality Analysis

Integration Working Groups (TIWG) and program reviews, review acquisition documentation, provide government testers with technical support, and support milestone (PEOs), Program Managers (PMs), and independent evaluators with EW, chemical, biological, nuclear, and ballistic expertise to conduct special studies, support Test decision reviews; and is appropriately funded in Budget Activity 6.

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Exhibit R-2 (PE 0605604A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605604A Survi	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	lity/Letha	lity Ana	lysis		PROJECT D670
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D670 Emerging Technology Systems	5153	4776	5278	4759	2583	3055	3171	3298	3298 Continuing Continuing	Continuing

chemical, biological, nuclear, meteorological, and ballistic expertise to conduct special studies, support TIWGs and program reviews, acquisition documentation review, and measurements, modeling, simulations, laboratory experiments, and field investigations. This effort also supports HQDA, PEOs, PMs and independent evaluators with EW, includes Horizontal Technology Integration systems, and Advanced Technology Demonstration initiatives. Survivability deficiencies are identified and recommendations are made to PEO/PMs to provide hardening fixes early on in program development. This work is accomplished through theoretical and engineering analyses, signature provides Government testers with technical support. Horizontal Technology Integration systems include 2ND Generation FLIR (2ND GEN FLIR), Battlefield Combat A. Mission Description and Justification: Project D670 - Emerging Technology Systems: This project performs integrated SLA for a category of systems which Identification System (BCIS), Global Positioning System (GPS), and Enhanced Position Location Reporting System (EPLRS). Advanced Technology Demonstration initiatives include Advanced Armored Vehicle Technology, Defensive Aided Suites (DAS), and Missile Countermeasure Devices (MCD). This project also provides oversight of the Army's Electromagnetic Environmental Effects (E3) Program.

FY 1996 Accomplishments:

•	2696	2696 Conducted EW performance analyses, to include infrared (IR), radio frequency (RF), and electro-optical spectrums to support integrated survivability and lethality analyses. Developed necessary test beds to conduct laboratory and field investigations, and prepared interim survivability analysis reports. This work supported 2ND GEN FLIR, BCIS, GPS, DAS, EPLRS, and E3.
•	1420	Conducted analyses to determine ballistic effects. Developed system description models, performed damage simulations, and collected experimental
•	1037	data to support integrated survivability an survivability analysis reports. This work conducted analyses to address nuclear hat battlefield conditions. Developed necessa This work supported 2ND GEN FLIR. BC
Total	5153	

FY 1997 Planned Program:

technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports. Conduct EW vulnerability assessments to support integrated survivability and lethality analyses of emerging technology systems and horizontal Support the Army's E3 program. 2397

Project D670

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 1605604A Survivability/Lethality Analysis	
FY 1997 Planned	FY 1997 Planned Program (Continued) 1382 Conduct ballistic effects investigations, develop system description models, perform damage simulations, and collect experimental data to support integrated survivability and lethality analysis reports. 880 Conduct engineering investigations addressing nuclear hardening and survivability, chemical and biological warfare contamination and decontamination, and dirty battlefield conditions to support integrated survivability/lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports. 117 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	d collect experimental data to support warfare contamination and arging technology systems and horizontal pare interim survivability analysis reports.
FY 1998 Planned Program:	Perform integrated EW survivability and lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary brassboard and prototype test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports. Recommend Electronic Counter Counter Measure (ECCM) enhancements. Support the Army's E3 program. Conduct ballistic effects investigations, develop system description models, perform damage simulations, and collect experimental data to support integrated survivability and lethality analysis reports. Conduct engineering investigations addressing nuclear hardening and survivability, chemical and biological warfare contamination and dirty battlefield conditions to support integrated survivability/lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports.	echnology applications. Develop rim survivability analysis reports. 1. d collect experimental data to support warfare contamination and rging technology systems and horizontal pare interim survivability analysis reports.
FY 1999 Planned Program:	Ogram: Conduct EW vulnerability assessments to support integrated survivability and lethality analyses of advanced 2nd and 3rd generation emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports. Support the Army's E3 program. Conduct ballistic effects investigations, develop system description models, perform damage simulations, and collect experimental data to support integrated survivability and lethality analysis reports. Conduct engineering investigations addressing nuclear hardening and survivability, chemical and biological warfare contamination and decontamination, and dirty battlefield conditions to support integrated survivability/lethality analyses of emerging technology systems and horizontal technology applications. Develop necessary test beds to conduct laboratory and field investigations, and prepare interim survivability analysis reports.	2nd and 3rd generation emerging bry and field investigations, and prepare d collect experimental data to support warfare contamination and rging technology systems and horizontal pare interim survivability analysis reports.
Project D670	Page 4 of 20 Pages	Exhibit R-2 (PE 0605604A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATIO	N SHEET	(R-2 Exhib	it)	DATE Feb	February 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A Surv	AD TITLE Survivabili	D TITLE Survivability/Lethality Analysis		PROJECT D670
B. <u>Project Change Summary</u> FY 1997 President's Budget Appropriated Value	FY 1996 5418 5570	FY 1997 4879 4776	<u>FY 1998</u> 5278	<u>FY 1999</u> 5243		
Adjustments to Appropriated value FY 1998 Pres Bud Request	-41/ 5153	4776	5278	4759		
Project D670	Pno	Page 5 of 20 Pages		<u> </u>	Evhihit D.2 (DE OROGEOAA)	180401
		1110		LVI	1011 11-2 (1 L. 001	John Trees

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	rem jus	TIFICA	TION SI	HEET (F	R-2 Exhil	bit)		DATE Fet	February 1997	766
BUDGET ACTIVITY 6 - Management Support			PE N 060	PE NUMBER AND TITLE 0605604A Surv	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	ity/Letha	lity Anal	ysis		PROJECT D671
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D671 Air Defense/Missile Defense Systems	6199	5687	5950	5779	3220	3643	3785		Continuing	3940 Continuing Continuing

Manager (PM) and the Program Executive Officer (PEO) to direct weapon system development efforts and structure product improvement programs; by the user to develop A. Mission Description and Justification: Project D671 - Air Defense/Missile Defense Systems: Provides the survivability/lethality analysis of U.S. Army air defense and missile defense systems to the full spectrum of battlefield threats and recommends fixes to improve their battlefield survivability. The results are used by each Project doctrine and tactics; and by decision makers in formulating program/production decisions. Anti-Radiation Missile (ARM) Counter-Arm efforts assess threat technologies against Theater Missile Defense (TMD), PATRIOT, ISTARS, Medium Extended Air Defense System (MEADS), and FAAD-C21 ground based sensors. Also funds salaries, travel, equipment/facilities, and management/administrative support needed to execute the program.

FY 1996 Accomplishments:

•	3852	3852 Conducted the electronic warfare vulnerability assessment for U.S. Army air defense and missile defense systems that are in development, undergoing
		P31, or have been recently fielded. Examples of such systems are PATRIOT, MEADS, Stinger, Avenger, Ground Based Sensor (GBS). Theater
		Missile Defense (TMD-GBR), THAAD, and Bradley Stinger Fighting Vehicle Enhanced (BSFV-E).
•	617	Conducted the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems.
•	1150	Conducted the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems
•	280	280 Provided integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FV 06
Total	6199	

FY 1997 Planned Program:

30	025 C	3025 Conduct the electronic warfare vulnerability assessment for U.S. Army air defense and missile defense systems that are in development, undergoing
	7.	r31, or have been recently fielded. Examples of such systems are PATRIOT, MEADS, Stinger, GBS, LINEBACKER. THAAD and National Missile.
	Ω	Defense (NMD).
•	O 098	Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems
•	864 C	Conduct the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems.
•	250 Pr	Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 97
•	549 St	Support Consolidated Army Evaluation Function.
1	139 Sr	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total 56	2687	

Project D671

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Exhibit R-2 (PE 0605604A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	ATION SHEET (I	R-2 EXHIB	T) DATE February 1997	
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A Surv	D TITLE Survivabilit	D TITLE PROJECT PROJE	PROJECT D671
 FY 1998 Planned Program: 3526 Perform integrated electronic warfare vulnerability/survivability analysis and assessment of U.S. Army air defense and missile defense sy are in development, undergoing P3I, or have been recently fielded to include PATRIOT, MEADS, Stinger, GBS, LINEBACKER, THAA NMD. 1020 Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems. 379 Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 98. Total 5950 	y/survivability analysis and recently fielded to include nospheric effects survivabil is for U.S. Army air defens to support scheduled air de	assessment of UPATRIOT, MEAlity analysis for Ue and missile def	ogram: Perform integrated electronic warfare vulnerability/survivability analysis and assessment of U.S. Army air defense and missile defense systems that are in development, undergoing P3I, or have been recently fielded to include PATRIOT, MEADS, Stinger, GBS, LINEBACKER, THAAD, and NMD. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense systems. Conduct the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems. Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 98.	s that
 FY 1999 Planned Program: 3476 Conduct the electronic warfare vulnerability assessment for developmental U.S. Army air defense and missile defense systems, pre-planne improvements of current systems, and recently fielded systems. Provide interim susceptibility reports. Recommend ECCM enhancements. 1012 Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems. 275 Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 99. Total 	sment for developmental Uded systems. Provide intenspheric effects survivabilis for U.S. Army air defense to support scheduled air de	.S. Army air deftrim susceptibility ity analysis for U and missile deftense/missile def	ogram: Conduct the electronic warfare vulnerability assessment for developmental U.S. Army air defense and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. Provide interim susceptibility reports. Recommend ECCM enhancements. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army air defense and missile defense systems. Conduct the ballistic survivability/lethality analysis for U.S. Army air defense and missile defense systems. Provide integrated survivability/lethality analyses to support scheduled air defense/missile defense program decision milestones in FY 99.	oduct .
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 FY 1997 6359 5818 6537 5687 -338 5687	FY 1998 6224 5950	FY 1999 6570 5779	
Change Summary Explanation: Funding - FY 99 Funds decreased (-791	d (-791); reprogrammed to higher priority requirements.	oriority requirem	ents.	
Project D671	Page 7 of 20 Pages 1144		Exhibit R-2 (PE 0605604A)	Item 116

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SE	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 6 - Management Support	nt Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	пт <u>ге</u> urvivabil	lity/Letha	D ТПLE Survivability/Lethality Analysis			PROJECT D672
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D672 Aviation Systems	SU	4076	3660	3323	3174	1877	2027	2104	2188	Continuing	Continuing
A. Mission Descrip systems to the full sp major decision miles	A. Mission Description and Justification: Project D672 - Aviation Systems: Project investigates the Survivability/Lethality/Vulnerability (SLV) of Army aviation systems to the full spectrum of battlefield threats. Aircraft SLV deficiencies are identified and hardening fixes identified as appropriate. SLV analysis directly supports major decision milestone reviews, acquisition documentation, test and evaluation master plans, and cost/operational effectiveness analyses.	t D672 - Avi ircraft SLV onentation, tes	ation Syster eficiencies t and evalua	ns: Project are identifie tion master	investigates d and harder plans, and co	the Survival ling fixes ide ost/operation	oility/Lethall sntified as ap al effectiven	ity/Vulnerab opropriate. S ness analyses	ility (SLV) osLV analysis	of Army avia directly sup	tion ports
FY 1996 Accomplishments: • 2406 Provide warfare such sy	Provided for assessment of acoustic technology which might be developed to exploit potential susceptibilities of helicopters. Included electronic warfare vulnerability assessment for U.S. Army aviation systems that are in development, undergoing P3I, or have been recently fielded. Examples of such systems are R4H-66 Comanche, AH-64D Longbow Apache, MH-60K & MH-47E Special Operations Aircraft, OH-58D Kiowa Warrior, CH-	oustic techno ent for U.S. A nanche, AH-	logy which rany aviatio	might be dern systems the	veloped to en at are in devented MH-60K &	kploit potent relopment, u MH-47E Sp	ial susceptib ndergoing P ecial Operati	oilities of hel 31, or have b ions Aircraft	icopters. Inceen recently	cluded electr fielded. Ex Kiowa Warri	onic amples of or, CH-
	Conducted the ballistic survivability/lethality analysis for U.S. Army aviation systems. Conducted the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army aviation systems. Provided integrated survivability/lethality analyses to support scheduled aviation systems program decision milestones in FY 96.	ability/lethali gical, nuclea ity/lethality a	ty analysis fr, and atmos	or U.S. Arm pheric effec apport schee	ty aviation s ts survivabil duled aviatio	ystems. ity analysis n systems pr	for U.S. Arn ogram decis	ny aviation s sion milestor	ystems. nes in FY 96		
Total 4076											
FY 1997 Planned Program: 1894 Conduc recently Aircraft 574 Conduc 555 Conduc 205 Provide 343 Support 89 Small B Total 3660	Conduct the electronic warfare vulnerability assessment for U.S. Army aviation systems that are in development, undergoing P3I, or have been recently fielded. Examples of such systems are AH-64D Longbow Apache, OH-58D Kiowa Warrior, MH-60K & MH-47E Special Operations Aircraft, RAH-66 Comanche, CH-47D Chinook, and UH-60Q Ambulance. Conduct the ballistic survivability/lethality analysis for U.S. Army aviation systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army aviation systems. Provide integrated survivability/lethality analyses to support scheduled aviation systems program decision milestones in FY 97. Support Consolidated Army Evaluation Function. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	s vulnerabilit such systems CH-47D Chi ility/lethality cal, nuclear, sy/lethality an valuation Fu search/Small	v assessmen are AH-64. nook, and U analysis for and atmosph alyses to sultotion. Business Te	t for U.S. And D. Longbow H-60Q Aml U.S. Army eric effects apport scheduchnology T.	Apache, OF Apache, OF sulance. aviation syst survivability iled aviation ransfer (SBI	y assessment for U.S. Army aviation systems that are in a re AH-64D Longbow Apache, OH-58D Kiowa Warrichook, and UH-60Q Ambulance. analysis for U.S. Army aviation systems. and atmospheric effects survivability analysis for U.S. A alyses to support scheduled aviation systems program dention. Business Technology Transfer (SBIR/STTR) Programs.	t are in deve a Warrior, M U.S. Army gram decision	H-60K & M	dergoing P3 fH-47E Spec fems. s in FY 97.	v assessment for U.S. Army aviation systems that are in development, undergoing P3I, or have been are AH-64D Longbow Apache, OH-58D Kiowa Warrior, MH-60K & MH-47E Special Operations nook, and UH-60Q Ambulance. analysis for U.S. Army aviation systems. and atmospheric effects survivability analysis for U.S. Army aviation systems. alyses to support scheduled aviation systems program decision milestones in FY 97. totion. Business Technology Transfer (SBIR/STTR) Programs.	ម
Project D672				Page 8 of 20 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0605604A)	605604A)	







	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	N SHEET (F	R-2 EXHIBI	T) DATE February 1997	
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605604A Surv	TITLE Survivability	PROJECT PENUMBER AND TITLE PROJECT PRO	PROJECT D672
FY 1998 Planned Program:	Perform integrated electronic warfare vulnerability analysis and assessment of U.S. Army aviation systems and aviation support equipment to include: AH-64D Longbow Apache; OH-58D Kiowa Warrior; MH-60K & MH-47E Special Operations Aircraft; RAH-66 Comanche; CH-47D Chinook; UH-60Q Ambulance; Suite of Integrated RF Countermeasures; Suite of Integrated IR Countermeasures; Bird Dog; and Star Streak. Conduct the ballistic survivability/lethality analysis for U.S. Army aviation systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analyses to support scheduled aviation systems program decision milestones in FY 98.	and assessment of 50K & MH-47E S Suite of Integrated. Army aviation sy effects survivabilit scheduled aviation	FU.S. Army avia pecial Operations IR Countermea stems. by analysis for Un systems program systems	tion systems and aviation support equipment to is Aircraft; RAH-66 Comanche; CH-47D Chinoosures; Bird Dog; and Star Streak. S. Army aviation systems. In decision milestones in FY 98.	clude: UH-
FY 1999 Planned Program:	the electronic warfare vulnerabilising P31, or have been recently fielecial Operations Aircraft, RAH-66 ed IR Countermeasures, Bird Dognendations. the ballistic survivability/lethality the chemical, biological, nuclear, integrated survivability/lethality a	U.S. Army aviatic f such systems are 7D Chinook, UH- Provide interim su Army aviation sy: effects survivabilii scheduled aviatio	n systems and av AH-64D Longbo 60Q Ambulance, isceptibility repo stems y analysis for U.	ity assessment for U.S. Army aviation systems and aviation support equipment that are in development, ded. Examples of such systems are AH-64D Longbow Apache, OH-58D Kiowa Warrior, MH-60K & N Comanche, CH-47D Chinook, UH-60Q Ambulance, Suite of Integrated RF Countermeasures, Suite of and Star Streak. Provide interim susceptibility reports. Provide electronic counter-countermeasures and analysis for U.S. Army aviation systems and atmospheric effects survivability analysis for U.S. Army aviation systems program decision milestones in FY 99.	, WH-
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 Budget 4346 opriated Value -391 equest 4076	FY 1997 3739 3660 3660	FY 1998 3673 3323	FY 1999 3777 3174	
Change Summary Ex	Change Summary Explanation: Funding - FY 99 Funds decreased (-603); reprogrammed to higher priority requirements. Project D672	ogrammed to higher pr Page 9 of 20 Pages	iority requiremer	its. Exhibit R-2 (PE 0605604A)	

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605604A Surv	DE NUMBER AND TITLE OG05604A Survivability/Lethality Analysis	lity/Letha	llity Anal	ysis		PROJECT . D675
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D675 C4I/IEW Systems	4683	4921	4501	4033	2227	2625	2728		2841 Continuing Continuing	Continuing

U.S. Army EW systems. Provides threat weapon electronic design data to countermeasure developers and technical capability information to the intelligence community. vulnerabilities of foreign threat weapons and command, control, communications, computers and intelligence (C41) and Intelligence Electronic Warfare (IEW) systems to against the full spectrum of friendly and enemy threats. Provides field threat environment support for Electronic Warfare Vulnerability Analysis (EWVA). Analyzes A. Mission Description and Justification: Project D675 - C4I/IEW Systems: Supports survivability analysis of Army communications and electronic equipment Supports Army initiatives in vulnerability reduction of C4I/IEW systems against the full spectrum of battlefield threats, including information warfare.

FY 1996 Accomplishments:

- Conducted integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command and control systems. This effort supports Maneuver Control System, Common Hardware and Software, Standard Integrated Command Post Shelter, Advanced Field Artillery Tactical Data System, FAAD-C21, and Combat Service Support Control System.
 - Conducted integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army communications systems such as Mobile Subscriber Equipment, Single Channel Ground/Airborne Radio System (SINCGARS), GPS, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Reliable Tactical Terminal, and Enhance Manpack UHF-Terminal. 1589
- Conducted integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army IEW systems such as the BCIS, enhanced Firefinder radar, and Joint Surveillance Target Attack Radar System/Ground Station Module. 966
 - Provided integrated survivability/lethality analyses to support scheduled C4I/IEW systems program decision milestones in FY 96. 194

FY 1997 Planned Program:

4683

Total

- Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army communications Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command and control systems. This effort supports the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C21, Standard Integrated Command Post Shelter, all Source Analysis System, and Combat Service Support Control System. 1421 1335
- Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army IEW systems such as the BCIS, Joint Surveillance Target Attack Radar System/Ground Station Module, improved FLIR, and enhanced Firefinder radar. 1433

systems such as SINCGARS, GPS, Mobile Subscriber Equipment, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Reliable

Tactical Terminal, next Tactical Data Radio, and Enhance Manpack UHF Terminal.

Project D675

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Exhibit R-2 (PE 0605604A)







	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	
FY 1997 Planned 200	 FY 1997 Planned Program: (continued) 200 Provide integrated survivability/lethality analyses to support OPTEC for scheduled C4I/IEW systems program decision milestones in FY 97. 412 Support Consolidated Army Evaluation Function. 120 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Total 4921 	t OPTEC for scheduled C4I/IEW systems program decology Transfer (SBIR/STTR) Programs.	sision milestones in FY 97.
FY 1998 Planned Program: • 1915 Conduction Control System • 1539 Conduction	st integrated electronic, ballistic, an systems. This effort supports the FAAD-C21, Standard Integrated at integrated electronic, ballistic, an such as SINCGARS, GPS, Mobilistic, and such as SINCGARS, GPS, GPS, GPS, GPS, GPS, GPS, GPS, GP	ad chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command a Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Contra Command Post Shelter, All Source Analysis System, and Combat Service Support Control System, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army communical Subscriber Equipment, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Re	for U.S. Army command and Software, Maneuver Control se Support Control System. for U.S. Army communications Secure Mobile Anti-jam Reliable
• 847 • 200 Total 4501	Lactical Lerminal, and the next Lactical Data Radio. Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army IEW systems such as the BCIS, Joint Surveillance Target Attack Radar System/Ground Station and enhanced Firefinder radar. Provide integrated survivability/lethality analyses to support scheduled C4I/IEW systems program decision milestones in FY 98.	ical/nuclear/atmospheric effects survivability analysis ound Station and enhanced Firefinder radar. scheduled C4I/IEW systems program decision milest	for U.S. Army IEW systems such as ones in FY 98.
FY 1999 Planned Program: 1705 Conduction Control System 1405 Conduction System	rogram: Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army command and control systems. This effort supports the Advanced Field Artillery Tactical Data System, Common Hardware and Software, Maneuver Control System, FAAD-C21, Standard Integrated Command Post Shelter, all Source Analysis System and Combat Service Support Control System. Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army communications systems such as Mobile Subscriber Equipment, Single Channel Anti-jam Man Portable radio, Secure Mobile Anti-jam Reliable Tactical Terminal, and	ical/nuclear/atmospheric effects survivability analysis tillery Tactical Data System, Common Hardware and elter, all Source Analysis System and Combat Service ical/nuclear/atmospheric effects survivability analysis ael Anti-jam Man Portable radio, Secure Mobile Anti-	for U.S. Army command and Software, Maneuver Control Support Control System. for U.S. Army communications jam Reliable Tactical Terminal, and
• 776 • 147 Total 4033	the next Tactical Data Radio. Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for U.S. Army IEW systems such as the BCIS, Joint Surveillance Target Attack Radar System/Ground Station Module, and enhanced Firefinder radar. Provide integrated survivability/lethality analyses to support scheduled C4I/IEW systems program decision milestones in FY 99.	ical/nuclear/atmospheric effects survivability analysis ound Station Module, and enhanced Firefinder radar. scheduled C41/IEW systems program decision milest	for U.S. Army IEW systems such as ones in FY 99.
Project D675	Page	Page 11 of 20 Pages	Exhibit R-2 (PE 0605604A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I JUSTIFICATIO	N SHEET	(R-2 Exhib	it)	DATE Febr	February 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A Surv	ID TITLE Survivabili	OTITLE Survivability/Lethality Analysis		PROJECT D675
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 4999 5140 -457	FY 1997 5027 4921	FY 1998 4947	FY 1999 4827		
FY 1998 Pres Bud Request	4683	4921	4501	4033		
Change Summary Explanation: Funding - FY 99 Funds decreased (-794); reprogrammed to higher priority requirements. Project 10475	decreased (-794); reprogr	rogrammed to higher	priority requiren		Exhibit R-2 (PE OROS604A)	A A A A
	C	1149				Item 116

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	RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	FION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 19	1997
BUDGET ACTIVITY 6 - Management Support	ent Support			PE N 060	PE NUMBER AND TITLE 0605604A Surv	TITLE Survivabi	lity/Letha	ਹ ਸਾ⊓E Survivability/Lethality Analysis	į	1	РКОЈЕСТ D677
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D677 Ground Combat Systems	bat Systems	5680	5225	5190	5403	2920	3376	3510	3656	Continuing	Continuing
A. Mission Descri	A. Mission Description and Justification: Project D677 - Ground Combat Systems: Project investigates the survivability and vulnerability of Army ground combat	et D677 - Gro	und Comba	ıt Systems:	Project inve	estigates the	survivability	/ and vulnera	ability of Arı	my ground c	ombat
systems to the full spectrul major decision milestones.	systems to the full spectrum of battlefield threats. Analysis will support weapon requirements, test and evaluation master plans, cost/operational effectiveness analysis, and major decision milestones.	analysis will s	upport weap	on requiren	ents, test an	d evaluation	master plan	s, cost/opera	ational effect	iveness anal	/sis, and
FY 1996 Accomplishments:	ishments:										
1758	3 Conducted the electronic warfare vulnerability assessment for U.S. Army ground combat systems. This effort supported such systems as Bradley A3,	fare vulnerab	llity assessm	ent for U.S.	Army groun	nd combat sy	stems. This	s effort supp	orted such sy	ystems as Bra	idley A3,
<i>1920</i>	Command and Control Vehicle (C2V), Crusader (AFAS/FARV), ABRAMS M1A2, Breacher, and Heavy Assault Bridge.	tle (C2V), Cru	Isader (AFA	S/FARV), A	BRAMS M	1A2, Breach	er, and Heav	vy Assault B	3ridge.		
1327		ogical, nuclea	r, and atmos	inheric effec	ty ground of	lity analysis	for U.S. Arm	nv pround co	ombat systen	Su.	
228		llity/lethality	inalyses to s	upport sche	duled ground	1 combat sys	tems program	m decision n	nilestones in	FY 96.	***
Total 5680		•		•	•						
FY 1997 Planned Program:	Program:										
• 1073	Conduct the electronic warfare vulnerability assessment for U.S. Army ground combat systems such as Crusader, Bradley A3, Command and Control	re vulnerabilit	y assessmen	t for U.S. A	rmy ground	combat syste	ems such as	Crusader, B	3radley A3, (Command an	d Control
		reacher, Heav	y Assault B	ridge and th	e Family of	Medium Tac	tical Vehicle	es (FMTV).			
1747		oility/lethality	analysis for	U.S. Army	analysis for U.S. Army ground combat systems.	bat systems.					
1202		ical, nuclear,	and atmosph	eric effects	survivability	y analysis for	r U.S. Army	ground com	rbat systems.		
300		emonstrate in	tegrated ana	lysis of the	Defense Aid	ed Suite Pro	gram.	:		1	
549	Provide integrated survivability/lemainty analyses to support scheduled ground combat systems program decision milestones in FY 9/. Support Consolidated Army Evaluation Function.	ity/ietnaiity ar Evaluation Fu	laryses to suj nction.	pport scned	nea ground	combat syst	ems program	n decision m	illestones in j	FY 97.	
127		esearch/Small	Business Te	chnology T	ransfer (SBI	Business Technology Transfer (SBIR/STTR) Programs	ograms				
Total 5225				3			ò				
FY 1998 Planned Program:	Program:										
• 1360	Conduct integrated electronic warfare vulnerability analysis and assessment of U.S. Army ground combat systems such as Crusader, Bradley A3,	warfare vuln	erability ana	lysis and as	sessment of	U.S. Army g	round comb	at systems su	uch as Crusa	ider, Bradley	A3,
	Command and Control Vehicle, ABRAMS	le, ABRAMS	M1A2, Brea	acher, and tl	e Family of	Medium Ta	ctical Vehic	les (FMTV).	M1A2, Breacher, and the Family of Medium Tactical Vehicles (FMTV). Provide interim susceptibility	terim suscepi	ibility
• 2232	reports. Recommend Ew survivability ennancements. Conduct the ballistic survivability/lethality analysis for U.S. Army ground combat systems.	vivability enn sility/lethality	ancements. analysis for	U.S. Army	ground com	bat systems.					
Project D677			•	Page 13 of 20 Pages	O Pages			Fyhih	Evhihit D 2 (DE OROEGOAA)	SOESOAA)	
riolect Day/				1 uge 13 0/	20 1 uges			EXIID	11 N-2 (PE U	000004A)	

RDT&E BUDGET ITEM JUST	'IFICATION SHEET (R-2 EXHIBIT)	ET (R-2 EXHIE	BIT) DATE	February 1997
BUDGET ACTIVITY 6 - Management Support	PE NUM 0605	PE NUMBER AND TITLE 0605604A Survivabil	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	PROJECT D677
 FY 1998 Planned Program (continued) 1340 Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army ground combat systems. 258 Provide integrated survivability/lethality analyses to support scheduled ground combat systems program decision milestones in FY 98. Total 5190 	and atmospheric effects su alyses to support schedul	urvivability analysis for ed ground combat syste	r U.S. Army ground combat systems program decision milestone	stems. es in FY 98.
 FY 1999 Planned Program: 1410 Conduct the electronic warfare vulnerability assessment for U.S. Army ground combat systems such as Crusader, Bradley A3, Comma Vehicle, ABRAMS M1A2, Breacher, and the Family of Medium Tactical Vehicles (FMTV). 2318 Conduct the ballistic survivability/lethality analysis for U.S. Army ground combat systems. 270 Provide integrated survivability/lethality analyses to support scheduled ground combat systems program decision milestones in FY 99. Total 5403 		ny ground combat syste tical Vehicles (FMTV) round combat systems. revivability analysis for ed ground combat syste	assessment for U.S. Army ground combat systems such as Crusader, Bradley A3, Command and Control e Family of Medium Tactical Vehicles (FMTV). nalysis for U.S. Army ground combat systems. In atmospheric effects survivability analysis for U.S. Army ground combat systems. Ilyses to support scheduled ground combat systems program decision milestones in FY 99.	A3, Command and Cont stems.
B. <u>Project Change Summary</u> FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 5846 5337 6010 5225 -330	1997 FY 1998 5337 5732 5225	FY 1999 6349	
FY 1998 Pres Bud Request	5680 5;	5225 5190	5403	
Change Summary Explanation: Funding - FY 99 Funds decreased ((-946); reprogrammed t	higher priority requirer		
Project D677	Price 14 of 20 Prices	Datas	קיים מייניקים מייניקים	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 0 6 0	PE NUMBER AND TITLE 0605604A Surv	E NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	lity/Letha	lity Anal	ysis	a. u	PROJECT D678
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D678 Munitions Systems	5672	5609	5613	5615	3115	3569	3706	3855	3855 Continuing Continuing	Continuing

fire support smart weapons (smart and conventional) to the full spectrum of battlefield threats. The analysis is integrated across all battlefield threats, i.e., conventional ballistic, electronic warfare, directed energy, nuclear weapons effects, and nuclear and chemical/biological contamination effects. This work is accomplished through A. Mission Description and Justification: Project D678 - Munitions Systems: This project funds the investigation of the lethality/vulnerability of Army theoretical and engineering analyses, signature measurements, modeling, simulations, laboratory experiments, and field investigations.

FY 1996 Accomplishments:

FY 1997 Planned Program:

	0 Conduct the ballistic survivability/lethality analysis for U.S. Army munitions systems.	9 Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army munitions systems.			7 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	
2253	930	920	820	549	137	2609
•	•	•	•	•		Total

Project D678

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RDT&E BL	RDT&E BUDGET ITEM JUSTIFICATIO	IFICATION SHEET (R-2 EXHIBIT)	R-2 EXHIB	T) DATE	February 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605604A Surv	D TITLE Survivabili	D TITLE Survivability/Lethality Analysis	PROJECT D678
FY 1998 Planned Program:	Operam: Conduct the electronic warfare vulnerability assessment for developmental U.S. Army munitions systems and any associated P31. Conduct electronic warfare countermeasure analysis/support for U.S. Army munitions to include FOT TOW, MSTAR, Precision Guided Mortar Munition (PGMM), and EFOG-M. Conduct the ballistic survivability/lethality analysis for U.S. Army munitions systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army munitions systems. Provide integrated survivability/lethality analyses to support scheduled munitions systems program decision milestones in FY 98.	or developmental Ununitions to includes. S. Army munitions ic effects survivabior strains ort scheduled munitions.	J.S. Army muniti FOT TOW, MS systems. lity analysis for U	assessment for developmental U.S. Army munitions systems and any associated P31. Conduct electronic U.S. Army munitions to include FOT TOW, MSTAR, Precision Guided Mortar Munition (PGMM), and unalysis for U.S. Army munitions systems. In a systems of atmospheric effects survivability analysis for U.S. Army munitions systems. In a system of the condition of the	ed P31. Conduct electronic tar Munition (PGMM), and s.
FY 1999 Planned Program: 2642 Conduct the e smart payload Sense and Des 1324 Conduct the b 1249 Conduct the c 400 Provide integr	Operam: Conduct the electronic warfare vulnerability assessment for U.S. Army munitions systems such as Army Tactical Missile System smart payloads such as BAT and BAT P31, Hellfire-Longbow Missile, STAFF, Wide Area Mine (WAM)/WAM PIP, Javelin, EF Sense and Destroy Armor (SADARM) P31, and MSTAR. Conduct the ballistic survivability/lethality analysis for U.S. Army munitions systems. Conduct the chemical, biological, nuclear, and atmospheric effects survivability analysis for U.S. Army munitions systems. Provide integrated survivability/lethality analyses to support scheduled munitions systems program decision milestones in FY 99.	or U.S. Army muni bow Missile, STA S. Army munitions ic effects survivabi ort scheduled muni	tions systems suc FF, Wide Area M systems. lity analysis for U tions systems pro	assessment for U.S. Army munitions systems such as Army Tactical Missile System (ATACMS) with Hellfire-Longbow Missile, STAFF, Wide Area Mine (WAM)/WAM PIP, Javelin, EFOG-M, FOT TOW, and MSTAR. Inalysis for U.S. Army munitions systems. In atmospheric effects survivability analysis for U.S. Army munitions systems. Ilyses to support scheduled munitions systems program decision milestones in FY 99.	System (ATACMS) with slin, EFOG-M, FOT TOW, FY 99.
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 5819 5982 -310 5672	FY 1997 5729 5609 5609	FY 1998 5614 5613	FY 1999 6193 5615	
Project D678	Pag	Page 16 of 20 Pages 1153		Exhibit R-2 (Exhibit R-2 (PE 0605604A) Item 116





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BUDGET ACTIVITY 6 - Management Support			PE N	E NUMBER AND TITLE 0605604A Surv	E NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	lity/Letha	lity Anal			РКОЈЕСТ D679
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D679 Soldier Systems	787	797	825	735	421	449	463	478	478 Continuing Continuing	Continuing

A. Mission Description and Justification: Project D679 - Soldier Systems: This project provides the MANPRINT Soldier Survivability Assessments (SSvA) required for the MANPRINT Soldier Survivability Domain. The survivability of soldier systems is investigated and reported to milestone decision reviews. Broad areas addressed by SSvA are: Fratricide reduction; soldier detectability reduction; attack prevention if detected; damage prevention; medical injury reduction; the reduction of mental and established Manpower, Personnel, and Training goals and constraints. A major thrust of this project is to support individual-soldier related programs and materiel to physical fatigue. The SSvA addresses the operation; maintenance and support of the system being evaluated and how these factors might impact the system's premaximize survivability and functionality against the full spectrum of battlefield threats.

FY 1996 Accomplishments:

System Force XXI Land Warrior and Air Warrior, including the Protective Clothing and Individual Equipment, Chem/Bio Mask, Integrated Headgear, Conducted integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warrior Provided integrated survivability/lethality analyses to support scheduled soldier systems program decision milestones in FY 96. Coordinated preparation and direct execution of MANPRINT Soldier Survivability Assessments and Reports. Computer and Commo System, and Weapon System. 115 787 Total

FY 1997 Planned Program:

- Conduct integrated electronic, ballistic, and chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warrior System including the Computer and Commo System, Weapon System, Protective Clothing and Individual Equipment, Chem/Bio Mask, and Integrated Headgear.
 - Coordinate preparation and direct execution of MANPRINT Soldier Survivability Assessments and Reports. 100
- Sustainment of international soldier activities (NATO); provide chem/bio/physiology expertise for operations other than war and less-than-lethal 47
- Provide integrated survivability/lethality analyses to support scheduled soldier systems program decision milestones in FY 97. 102
 - Support Consolidated Army Evaluation Function.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 197

Total

Project D679

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	RDT&E BUDGET ITEM JUSTIFIC,	FICATION SHEET (R-2 EXHIBIT)	R-2 EXHIB	DATE	February 1997
BUDGET ACTIVITY 6 - Manageme	рбет АстіVITY - Management Support	PE NUMBER AND TITLE 0605604A Surv	D TITLE Survivabilit	Survivability/Lethality Analysis	PROJECT D679
FY 1998 Planned Program: • 494 Conduction of the Conduction of the Conduction of the Coordinate of th	t integrated electronic, ballistic, and Warrior Systems including the Com and Integrated Headgear, and Target nate preparation and direct execution	al/biological/nuclear/atmond Commo System, Weay sition System.	ospheric effects son System, Protein Assessmen	chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warrior puter and Commo System, Weapon System, Protective Clothing and Individual Equipment, Chem/Bio Acquisition System.	Army Land Warrior uipment, Chem/Bio
47 Total 825		TO); provide chem/bio/ph	onny Assessmenty siology expertis	ts and Nepotts. e for operations other than war an medicision milestones in FY 98.	ıd less-than-lethal
FY 1999 Planned Program: 422 Conduc and Air Mask, a 166 Coordii 47 Sustain efforts 100 Provide Total 735	it integrated electronic, ballistic, and Warrior Systems including the Comind Integrated Headgear, and Target ate preparation and direct execution ment of international soldier activities integrated survivability/lethality and	al/biological/nuclear/atmond Commo System, Weapsition System. NPRINT Soldier Survival(C); provide chem/bio/ph. Support scheduled soldie	ospheric effects son System, Protebility Assessmen ysiology expertis	chemical/biological/nuclear/atmospheric effects survivability analysis for the U.S. Army Land Warrior puter and Commo System, Weapon System, Protective Clothing and Individual Equipment, Chem/Bio Acquisition System. of MANPRINT Soldier Survivability Assessments and Reports. s (NATO); provide chem/bio/physiology expertise for operations other than war and less-than-lethal alyses to support scheduled soldier systems program decision milestones in FY 99.	Army Land Warrior uipment, Chem/Bio id less-than-lethal
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary Budget ropriated Value	FY 1996 FY 1997 808 814 829 797 -42 797	FY 1998 798 825	FY 1999 775 735	
Project D679		Page 18 of 20 Pages		Exhibit R-2 (PE 0605604A)	0605604A)
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 6 - Management Support	:		PE NI 060	PE NUMBER AND TITLE 0605604A Survivability/Lethality Analysis	ritle Survivabil	lity/Letha	ality Anal	ysis	- U	PROJECT D734
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D734 Survivability Evaluation	0	0	1650	1180	673	683	694	705	705 Continuing Continuing	Continuing

(E3), atmospheric/obscuration and meteorological effects on soldier/system survivability are properly addressed. Evaluation results will be incorporated into a single Army soldier and materiel system survivability into an integrated Army evaluation supporting decision makers at milestone reviews. It includes the planning and coordination of strategy and incorporate SLAD efforts to ensure that electronic warfare (EW), conventional ballistics, nuclear, chemical, biological, electromagnetic environmental effects developmental tests, experiments, and subsequent evaluation of results to determine system survivability in battlefield threat environments. Evaluators will develop the A. Mission Description and Justification: Project D734 - Survivability Evaluation: This is not a new start. Funds were realigned from other projects in this PE to reflect consolidation of the Army materiel evaluation function under the US Army Operational Test and Evaluation Command. This project provides for evaluation of evaluation and presented at all acquisition milestones.

FY 1996 Accomplishments: Project funded by SLAD under other projects in this PE.

FY 1997 Planned Program: Project funded by SLAD under other projects in this PE.

FY 1998 Planned Program:

- 130 Conduct evaluation of PATRIOT and Armored Scout Vehicle (ASV).
- Review analysis methodology and data for MLRS A1, BFIST, BREACHER, AND C2V.
 - 300 Review BRADLEY simulation, testing, and analysis plans.
 - 70 Review and analyze WAM MS III results.
 - 70 Establish requirements for WAM PIP.
- Review analysis methodology and data for C4I systems, Suite Of Integrated RF Countermeasures (SIRFCM), and SADARM.
 - 270 Perform evaluations of HELLFIRE LONGBOW, BAT P31, and FOT TOW.
 - Total 165

FY 1999 Planned Program:

- 300 Evaluate survivability/lethality analysis of BRADLEY.
- 300 Evaluate survivability/lethality of MLRS A1, BFIST, BREACHER, and C2V.
- 300 Analyze methodology and data for THAAD.
- 280 Conduct evaluations of WAM PIP, BAT P31, SIRFCM.
 - otal 118

Project D734

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Exhibit R-2 (PE 0605604A)

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BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605604A Surv	ाग∟E Survivabilit़	отпе Survivability/Lethality Analysis	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	6 FY 1997 0 0 0 0 0 0	FY 1998 0 1650	FY 1999 0 1180	
Change Summary Explanation: Funding - FY 98 Funds (+1180) - funding re-	- funding realigned from other projects within this PE.	jects within this jects within this	FE. FE.	
Project D734	Page 20 of 20 Pages		Exhibit R-2	Exhibit R-2 (PE 0605604A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI 060 Fac	PE NUMBER AND TITLE 0605605A DOD H Facility (HELSTF)	TITLE DOD High LSTF)	Energy	Laser Sy	PE NUMBER AND TITLE 0605605A DOD High Energy Laser System Test Facility (HELSTF)		PROJECT DE97
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE97 DoD High Energy Laser Systems Test Facility (HELSTF)	33231	29974	14952	14976	14952	14938	14924	14943	14943 Continuing Continuing	Continuing
A. Mission Description and Budget Item Instiffcation - Draingt DE07 Dad Dick Engage 1 con Section 2015 111, other Contraction	ofion - Proje	ot DE07 De	D Ulak Eng							

laboratory up through full scale flying target tests. Test facility support operations are required for general research and development; therefore, this PE is appropriate for based high energy laser (HEL) RDTE capability at White Sands Missile Range, NM in support of Tri-Service HEL research and development and damage, vulnerability, and lethality laser testing. The HELSTF's laser development support capabilities include a certified laser test range, a fully integrated laser support facility, an extensive u buuget item Justilication - Project DE9/ DoD High Energy Laser Systems Test Facility (HELSTF): The HELSTF provides a broad array of fully instrumented test sites and the Sea Lite Beam Director (SLBD). This multiple use facility supports testing of laser effects for targets ranging from scaled inclusion in Budget Activity 6.

FY 1996 Accomplishments:

- 23737 Performed required site operations and maintenance activities.
 - 4747 Joint US/Israeli Nautilus Program
- 4747 Joint US/Israeli Tactical High Energy Laser (THEL) Program.
 - Total 33231

FY 1997 Planned Program:

- Provide funding to perform required site operations and maintenance activities to maintain laser system testing infrastructure. 23555
 - 5730 Solid State Laser.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 689
 - Total 29974

FY 1998 Planned Program:

- Perform Operation and Maintenance and base operations support functions in support of the Army, Department of Defense and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems.
- Provide operations and maintenance for organic high energy laser systems and associated optical trains. Provide the means to conduct ballistic missile signature information gathering and data collection on ballistic missile defense systems tests conducted at White Sands Missile Range. 5000
 - Total 14952

Project DE97

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Exhibit R-2 (PE 0605605A)

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	PE NUMBER AND TITLE 0605605A DOD High Energy Laser System Test Facility (HELSTF)	em Test	PROJECT DE97

FY 1999 Planned Program:

- 9976 Perform Operation and Maintenance and base operations support functions in support of the Army, Department of Defense and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems.
- Operations, maintenance and upgrades on organic high energy lasers and associated optical trains. Support ballistic missile defense signature data collection efforts. 5000

14976

Total

NOTE: Effective FY 1997 the Nautilus/THEL program transfers to PE 0603308A.

FY 1999	0			14976
FY 1998				14952
FY 1997				29974
FY 1996	34043	35000	6921-	33231
B. Project Change Summary	FY 1997 President's Budget	Appropriated Value	Adjustments to Appropriated Value	FY 1998 Pres Bud Request

Change Summary Explanation: FY1997 - Congressional Increase for minimum HELSTF operations and Solid State Laser.

FY 1998/1999 - Army restored funding to provide for minimum essential operations and maintenance of HELSTF.

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Exhibit R-2 (PE 0605605A)



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BUDGET ACTIVITY 6 - Management and Support			PE NI 000	PE NUMBER AND TITLE 0605606A Aircr	E NUMBER AND TITLE D605606A Aircraft Certification	ertificatio	nc			PROJECT D092
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D092 Aircraft Certification	2821	2840	2919	2924	2935	2976	3209	3293	3293 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification. Performs all engineering functions essential for certifying the airworthiness of assigned Army aircraft. Performs future system/subsystems. Manages the test and evaluation process to support the airworthiness qualification of developmental and fielded aircraft systems. This project funds activities required for general research and development on support of aircraft qualification. Since these activities are not allocable to specific R&D missions, this Program Executive Office and the Army Aviation and Troop Command Program/Project/Product Manager requirements for major development/modification and any qualification/testing on fielded aircraft and materiel changes for all assigned Army aircraft systems. Provides airworthiness engineering support to the Army Aviation safety-of-flight investigations/assessments and issues messages to the field. Manages/executes the Army's Aeronautical Design Standards (ADS) Program; ADS is a continuously evolving process incorporating revisions for each change to the standard design of an aircraft system. Manages airworthiness approval of new vendor project is appropriately funded in Budget Activity 6.

FY 1996 Accomplishments:

7	760 Managed/executed technical and airworthiness qualification mission for PEO Aviation force modernization aircraft systems.
	598 Continued to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization aircraft systems.
	150 Managed/executed the Army Aeronautical Design Standards Program.
Š	865 Provided continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems.
.4	448 Continued to provide test management capability for PEO Aviation program/project/product managers.
Total 28.	821

FY 1997 Planned Program:

Project D092

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Exhibit R-2 (PE 0605606A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TON SHEET	(R-2 Exhibi	t)	DATE February 1997	266
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605606A Aircr	ND TITLE Aircraft Certification	tification		PROJECT D092
FY 1998 Planned Program:	rogram: Manage/execute technical and airworthiness qualification mission for PEO Aviation force modernization aircraft systems. Continue to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization aircraft systems. Manage/execute the Army Aeronautical Design Standards Program. Provide continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems. Continue to provide test management capability for PEO Aviation program/project/product managers.	on mission for PEO of the property of the prop	Aviation force mod O Aviation force r o PEO Aviation for project/product ma	dernization aircraft s nodernization aircral rce modernization a anagers.	ystems. ft systems. ircraft systems.	
FY 1999 Planned Program:	rogram: Manage/execute technical and airworthiness qualification mission for PEO Aviation force modernization aircraft systems. Continue to ensure safety-of-flight investigations/assessments to include PEO Aviation force modernization aircraft systems. Manage/execute the Army Aeronautical Design Standards Program. Provide continuing engineering support for emerging technology upgrades to PEO Aviation force modernization aircraft systems. Continue to provide test management capability for PEO Aviation program/project/product managers.	n mission for PEO , ments to include PE ds Program. chnology upgrades t O Aviation program/	Aviation force mod O Aviation force n o PEO Aviation fo project/product ma	dernization aircraft sy nodernization aircraf orce modernization aj nagers.	ystems. ft systems. ircraft systems.	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	Summary FY 1996 's Budget 2894 ropriated Value -155	FY 1997 2905 2840	<u>FY 1998</u> 2901	<u>FY 1999</u> 2898		
FY 1998 Pres Bud Request		2840	2919	2924		
Project D092		Page 2 of 2 Pages		Exhib	Exhibit R-2 (PE 0605606A)	11

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	TEET (F	R-2 Exhi	bit)		DATE	February 1997	266
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support			PE NU 060	PE NUMBER AND TITLE 0605702A Mete Development, T	TITLE Meteorolc nt, Testin	ogical Su g & Eval	PE NUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	Research		PROJECT D128
5	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D128 Meteorological	Meteorological Support to TECOM Activities	6458	6348	6434	6658	6639	6801	6947	7096	Continuing	Continuing
A. Mission Descrit standard and special atmospheric analysis ballistic meteorologi ballistic tests, special products such as gosimulated nuclear blithe Army test ranges requirements. Includitherefore, is appropriational and standard includitherefore, is appropriational atmospheric and standard includitherefore, is appropriational atmospheric atmospheric atmospheric atmospheric and standard arms are appropriated atmospherical atmospheric atmospher	A. Mission Description and Budget Item Justification: Project D128 - Meteorological Support to Test and Evaluation Command (TECOM) Activities: Provides standard and specialized weather forecasts and data for test reports to satisfy Army/DoD RDT&E-unique test requirements for modern weaponry, i.e., (1) Unique atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, ballistic meteorological measurements, snow characterization and crystal structure; (2) Unique consultation forecasting to include prediction of sound propagation for ballistic tests, specialized prediction of light level and target to background predictions for electro-optical testing and ballistic meteorology; (3) Advisory and warning products such as go-no-go advisories for ballistic and atmospheric probe missiles, smoke obscurant tests, hazard predictions for chemical agent munitions disposal, simulated nuclear blasts, and weather warnings for range/test safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs) and the Army test ranges. Develops methodologies and acquires instrumentation/systems that allow meteorological teams to support current and future Army/DoD RDTE requirements. Includes research and development efforts directed towards support of installations or operations required for general research and development use,	ation: Proje for test repor ic transmittan terization and target to be d atmospheri ange/test safe acquires inst	et D128 - M Is to satisfy, Ice, extinction I crystal stru ckground pr c probe miss ty. Provide umentation/ I towards su	leteorologic Army/DoD) on, optical so cture; (2) U redictions fo siles, smoke s technical s systems that pport of inst	al Support RDT&E-uni cintillation, finique consu r electro-opi obscurant te upport to Au t allow mete	to Test and que test requinfrared tem; infrared tem; iltation forectical testing a ssts, hazard program proplegical to operations re	Evaluation nirements for perature, aer asting to income ballistic predictions for Executive earns to suppequired for g	Command (r modern we osol/smoke o lude predicti meteorology or chemical a Officers (PE) port current a	(TECOM) A aponry, i.e., cloud dispersion of sound v; (3) Advise agent muniti Os), Project and future A rch and deve	Activities: F (1) Uniquesion charact propagation ory and ware one disposa One disposa Managers (rmy/DoD R Plopment use	rovides e eristics, n for ning l, PMs) and DTE
FY 1996 Accomplishments:	hments: Provided weather forecasts, severe weather/advisories, staff meteorological services, and atmospheric measurements in support of all Army/DoD tests and projects at 11 Army test sites/ranges and as safari to off range test sites. Modernized operational equipment to meet customer requirements for meteorological support. - Start Phase III (last) upgrade of Surface Automated Meteorological System (SAMS) to increase data transmission rates, and data reduction and analysis.	evere weather ites/ranges an ment to meet of Surface A	'advisories, s d as safari to customer re utomated M	staff meteor o off range t quirements	ological servest sites. for meteorolal System (S	vices, and att logical suppo AMS) to inc	nospheric m ort. rease data to	er/advisories, staff meteorological services, and atmospheric measurements in support of all Army/Dol and as safari to off range test sites. et customer requirements for meteorological support. Automated Meteorological System (SAMS) to increase data transmission rates, and data reduction and	in support o	of all Army ta reduction	/DoD tests
• 755	- Electro-optical (EO) Instrumentation: Developed Small Portable Transmissometer Systems (SPOT) which measure IR, Near IR and Visible spectrum over 2Km. Path length Sustainment of mobile systems Validation of atmospheric profilers Provided program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams Weather forecast support systems/data Installed 3 National Weather Service "Next Generation Doppler Weather Radar" (NEXRAD) principal user processors at Redstone Arsenal, White	entation: De jth. ns. ofilers. of for meteorous for meteorous for meteorous service "Ne?	veloped Sma logical supp tt Generation	all Portable of our to RDTF	Fransmisson 3 and techni 7eather Rads	neter System cal review/as ur" (NEXRA	is (SPOT) w ssistance to i	hich measure ranges and m	e IR, Near IR reteorologics sors at Redst	R and Visible and Visible al teams.	e I, White
Total 6458	Sands Missile Range, and Aberdeen Proving Ground.	rdeen Provin	g Ground.								
Project D128				Page I of 3 Pages	Pages			Exhibit	Exhibit R-2 (PE 0605702A)	305702A)	

		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	DATE February 1997	
BUDGET ACTIVITY 6 - Managem	ivi⊤Y g eme i	BUDGET ACTIVITY 6 - Management and Support C	PENUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	PROJECT Research, D128 ctivities	8
FY 1997 Planned Program:	nned P	ogram:			
•	4568	Provide weather forecasts, severe weather warnings/advisories, staff meteorological services, and atmospheric measurements in support of all Army/DoD tests and projects at 10 Army test sites/ranges and as safari to off range test sites. (Ft. Hunter Liggett closed)	staff meteorological services, and atmospheric meas s safari to off range test sites. (Ft. Hunter Liggett cle	urements in support of all osed)	
•	1180	Modernize operational equipment to meet customer requirements for meteorological support. - Complete Phase III upgrade of SAMS to increase data transmission rates and data reduction and analysis. - Electro-optical Instrumentation: complete SPOT, initiate buy of Commercial Off the Shelf (COTS) Milli - Sustainment of mobile systems.	ustomer requirements for meteorological support. ncrease data transmission rates and data reduction and analysis. SPOT, initiate buy of Commercial Off the Shelf (COTS) Millimeter Wave instrumentation.	ave instrumentation.	
		- GPS upgrades to upper air systems. - Install atmospheric profilers			
•	009	Provide program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams. - Weather forecast support systems/data: Evaluate initial meteorological data sets for environmental modules to virtual testing. - Major Range and Test Facility Base (MRTFB) "4D" Weather System validation of real time, three dimensional integration of meteorological data from multiple and various sensor types to include EO and phenomena affecting weapons into a system that displays in a scale compatible with test needs for forecasts on-not decisions and allows for the realize conditions for forecasts of why a test may have failed.	ological data sets for environmental modules to virticological data sets for environmental modules to virticological data sets for environmental modules to virticological data sets for forest sinto a system that displays of feet conditions for forencia analyses of why a feet	eteorological teams. ual testing. tegration of meteorological d in a scale compatible with ter	ata st
Total	6348				
FY 1998 Planned Program:	inned Pr	weather forecast severe weather/ad	in Indicate and atmosphesis measurements is	of Godynam A Hogo morning	
•	1210	and projects at 10 Army test sites/ranges and as safari to off range test sites. Modernize operational equipment to meet customer requirements for meteorological support.	d as safari to off range test sites. ustomer requirements for meteorological support.	n support of an Army/ DoD te	SIS
		 Electro-optical Instrumentation: purchase COTS Millimeter Wave instrumentation. Sustainment of mobile systems and atmospheric profilers. Integrate meteorological instrumentation into MRTFR "4D" Weather System 	Wave instrumentation. Weather System		
•	820	Provide program management for meteorological support to RDTE and technical review/assistance to ranges and meteorological teams. - Weather forecast support systems/data: Improve/provide data sets for environmental modules to virtual testing.	Treating by section of the state of the stat	eteorological teams.	
Total	6434	- IMKTFB '4D' Weather System Installation at Dugway Proving Ground (DPG)	ing Ground (DPG).		
Project D128	~	Page 2	Page 2 of 3 Pages Exhibi	Exhibit R-2 (PE 0605702A)	
			1163	Item	Item 119

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET	(R-2 Exhib	(t) DATE	February 1997	
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605702A Mete Development, T	AND TITLE A Meteorolog ment, Testing	PE NUMBER AND TITLE 0605702A Meteorological Support to Research, Development, Testing & Evaluation Activities	PROJECT earch, D128 ties	ECT.
Project Change Summary Project Change Prosider (a Peroject Change Support Suppor	warnings/advisories, staff meteorological services, nges and as safari to off range test sites. customer requirements for meteorological support. ase Millimeter Wave instrumentation and upgrade to spheric profilers. In into MRTFB "4D" Weather System. logical support to RDTE and technical review/assix Provide data sets for environmental modules to viation at WSMR. FY 1996 FY 1997 FY 1998 6488 6420 6660 6348 6434 6434	orological services, st sites. orological support. ation and upgrade System. chnical review/assis ental modules to vii 6420 6434	warnings/advisories, staff meteorological services, and atmospheric measurements in support of all Army nges and as safari to off range test sites. customer requirements for meteorological support. ase Millimeter Wave instrumentation and upgrade SPOT IR instrumentation. ase Millimeter Wave instrumentation and upgrade SPOT IR instrumentation. ase Millimeter Wave instrumentation and upgrade SPOT IR instrumentation. an into MRTFB "4D" Weather System. In into MRTFB "4D" Weather System. Provide data sets for environmental modules to virtual testing. FY 1996 FY 1997 FY 1998 FY 1999 6480 6484 6420 6640 6660 6348 6434 6658 6458 6558	ents in support of all A logical teams.	ж
Project D128	Page 3 of 3 Pages		Exhibit R-2 (Exhibit R-2 (PE 0605702A)	Item 119

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	rem jus	TIFICA	TION SI	HEET (R	R-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605706A Mate	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	ystems	Analysis		,	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	17241	14126	29707	28675	26095	26829	27501	28129	Continuing	Continuing
D026 Test Design and Evaluation	5191	4169	0	0	0	0	0	0	0	9360
M541 Materiel Systems Analysis	12050	9957	8993	8664	7632	7978	8257	8543	Continuing	Continuing
M542 Major Systems Test, Design and Evaluation	0	0	20714	20011	18463	18851	19244	19586	Continuing	Continuing
NOTE: This PE has been restructured to reflect consolidation of the Army's material evaluation mission under the 11s Army Onerational Test and Evaluation Command (OPTEC) Brokens in	of the Army's ma	steriel evaluation	n mission unde	r the US Army	Onerational Te	et and Evaluati	on Command	OPTEC Drois	of DOTE Gundin	

realigned to project M542 in FY 1998 to reflect transfer of the Test Design and Evaluation function from the US Army Materiel Systems Analysis Activity (AMSAA) to OPTEC. Project M542 also increases due on of the Army's materiel evaluation mission under the US Army Operational Test and Evaluation Command (UPTEC). Project DU26 funding is to the realignment of the Operational Evaluation Command funding from the OMA appropriation. These realignments complete the consolidation of Army Evaluation under OPTEC.

AMSAA performs the independent evaluation of major Army systems as an integral part of the technical test design and evaluation mission. In both of these roles, AMSAA provides the technical capability for the conduct of materiel systems analysis in support of Army decision makers throughout the materiel acquisition process. Additionally, Mission Description and Budget Item Justification: The U.S. Army Materiel Systems Analysis Activity (AMSAA), as the Army's center for materiel systems analysis, makers of the Army and the Department of Defense (DoD). These projects fund efforts in support of operations required for general research and development and, since responds to analyses and evaluations required by the Army Acquisition Executive (AAE), Program Executive Officers/Program Managers (PEO/PM), and other decision they are not allocable to specific research and development missions, are appropriately funded in Budget Activity 6.

designated source of item level performance data and, as such, develops, maintains, and provides a diverse range of data for its and other Army and DoD agencies' analyses. analyses, and technology base analyses. AMSAA provides Army-wide support in the development of methodologies, models, simulations, and databases for use in its and In accomplishing its Materiel Systems Analysis Mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing standardized algorithms, and comprehensive verification, validation, and accreditation capabilities that help ensure the credibility of Army M&S. AMSAA is the Army's tradeoffs, weapons mix analyses, requirements analyses, technology insertion, advanced technology demonstration analyses, advanced concept technology demonstration systems. AMSAA conducts and supports systems analyses, such as: cost and operational effectiveness analyses, system cost/performance tradeoffs, early technology other Army agencies' analyses. AMSAA supports the Army modeling and simulation (M&S) community by providing item level performance methodology/data, AMSAA also develops reliability, availability, and maintainability (RAM) methodologies for use in its and other Army agencies' analyses.

Single Evaluation Report (SER) for Army acquisition programs. EAC provides technical evaluations for major milestone decisions, materiel changes, and materiel releases Evaluation Command as part of the Army consolidation of materiel evaluation. In the role of the independent technical evaluator, EAC provides the technical input to the in support of the Army Acquisition Executive. EAC designs technical, developmental, and production tests to address factors pertinent to the decision process, such as: The Army's independent technical evaluation role has been transferred from AMSAA to the Evaluation Analysis Center (EAC) in the Operational Test and

Page I of 9 Pages

Exhibit R-2 (PE 0605706A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1997

BUDGET ACTIVITY

6 - Management and Support

nt and Support

PE NUMBER AND TITLE 0605706A Materiel Systems Analysis

evaluations of system tests (e.g. performance, reliability, availability, and maintainability assessments). EAC has a lead role in the planning and execution of the Army Live evaluation role in Army acquisition and force development. Responsible for T&E and Continuous Evaluation of assigned Major Defense Acquisition Programs (MDAP), Fire Tests through its test design and evaluation responsibilities. Operational Evaluation Command (OEC), transferred from the OMA appropriation effective FY 1998, plans and conducts independent operational evaluations to determine and report the effectiveness and suitability of Army systems in support of the OPTEC test and technical maturity, technical risk, technical system performance, producibility, supportability, etc. EAC conducts technical assessments for milestone acquisition Major Automated Information Systems Review Council (MAISRC) programs, and In-Process Reviews (IPR).

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Exhibit R-2 (PE 0605706A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	пте Nateriel S	ystems	Analysis			PROJECT D026
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D026 Test Design and Evaluation	5191	4169	0	0	0	0	0	0	0	9360

funds the salaries of civilian employees assigned to the test design and evaluation mission. This project does not finance test facilities, test instrumentation or test equipment. and maintainability assessments). Has lead role in the planning and execution of the Army live fire tests through its test design and evaluation responsibilities. This project evaluations for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive (AAE). Designs technical, developmental, FY1996. In FY1997, this project funds the U.S. Army Operational Test and Evaluation Command (OPTEC), Evaluation Analysis Center (EAC) mission of technical test supportability, etc. Conducts performance and technical assessments for milestone acquisition evaluations of system tests (e.g. risk assessments and reliability, availability A. Mission Description and Justification: Project D026 funded the U.S. Army Materiel Systems Analysis Activity (AMSAA) mission of test design and evaluation in design and evaluation. Provides for the Army's technical evaluator of developmental systems and tests for all major Army acquisition programs. Provides technical and production tests to address factors pertinent to the decision process, such as: technical maturity, technical risk, technical system performance, producibility,

FY 1996 Accomplishments:

fielded. System evaluations supported program milestone decision reviews during FY 1996. Examples of evaluations support of AAE decisions/DA IPRs include: Bradley Upgrades, Sense and Destroy Armor, Command and Control Vehicle, All Source Analysis System, Advanced Field Artillery Provided test design and evaluation support for systems that are either in development, undergoing major materiel change programs or have been Tactical Data System, and the Abrams Battlefield Combat Identification System.

Developed test design and evaluation plans for developmental tests to be conducted in FY 1997 through FY 2001. This effort included test design and evaluation planning for systems projected to undergo live fire testing in FY 1997-1998. Early planning and analysis assures the early identification of requirements for long lead procurement of experimental/prototype equipment or test instrumentation and the integration of developmental and 1798

operational evaluations to support accelerated acquisition and technology transition programs.

FY 1997 Planned Program:

Total

include: Javelin, Army Tactical Missile System - Blocks IA and II, Extended Range Multiple Launch Rocket System, Enhanced Position Location and System evaluations will support program milestone decision reviews during FY 97. Examples of evaluations in support of AAE decisions/DA IPRs Provide test design and evaluation for systems that are either in development phase or undergoing major materiel change/technology insertion. Reporting System, Armored Gun System, and the Wide Area Mine System.

Project D026

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Exhibit R-2 (PE 0605706A)





RDT&E BUDGET ITEM JU	STIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY	PE NUMBER AND TITLE	TOBIORD
6 - Management and Support	0605706A Materiel Systems Analysis	

FY 1997 Planned Program: (continued)

evaluation planning for systems projected to undergo live fire testing in FY 98-99. Early planning and analysis assures the early identification of Develop test design and evaluation plans for developmental tests to be conducted in FY 98 through FY 02. This effort includes test design and requirements for long lead procurement of experimental/prototype equipment or test instrumentation and the integration of developmental and operational evaluations to support accelerated acquisition. Reduced funding will focus test design and evaluation mission on ACAT I and II development programs.

Total 4169

FY 1998 Planned Program: The AMSAA Test Design and Evaluation (TD&E) mission has been transferred to the Army Operational Test and Evaluation Command (OPTEC) (project M542) FY 1999 Planned Program: The AMSAA Test Design and Evaluation (TD&E) mission has been transferred to the Army Operational Test and Evaluation Command (OPTEC) (project M542).

B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 5254 5399 -208	FY 1997 4258 4169	FY 1998 4168	FY 1999 4359	
1998 President's Budget Request	5191	4169	C	_	

Change Summary Explanation: Funding: FY98/99 - The AMSAA Test Design and Evaluation (TD&E) mission has been transferred to the Army Operational Test and Evaluation Command (OPTEC) (project M542).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	161
BUDGET ACTIVITY 6 - Management and Support			PE NI 090	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	ritle fateriel S	ystems /	Analysis		9 6	PROJECT M541
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M541 Materiel Systems Analysis	12050	9957	8993	8664	7632	7978	8257	8543	8543 Continuing Continuing	Continuing

AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems to conduct and support systems analyses, such as: cost and advanced technology demonstration analyses, advanced concept technology demonstration analyses, and technology base analyses. AMSAA provides Army-wide support A. Mission Description and Justification: Project M541 funds the Army Materiel Systems Analysis Activity (AMSAA) primary mission of materiel systems analysis. accreditation capabilities that help ensure the credibility of Army M&S. AMSAA is the Army's designated source of item level performance data and, as such, develops, maintains, and provides a diverse range of data for its and other Army and DoD agencies' analyses. AMSAA also develops reliability, availability, and maintainability operational effectiveness analyses, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, in the development of methodologies, models, simulations, and databases for use in its and other Army agencies' analyses. AMSAA supports the Army modeling and (RAM) methodologies for use in its and other Army agencies' analyses. This project funds the salaries of civilian employees assigned to the materiel system analysis simulation (M&S) community by providing item level performance methodology/data, standardized algorithms, and comprehensive verification, validation, and mission.

FY 1996 Accomplishments:

•	999	566 Developed and certified system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater
		level studies.
•	9938	Provided analyses of performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/PMs and
		R&D Centers. Included were performance analyses, risk assessments, and reliability, availability, and maintainability assessments for HODA in
		support of milestone acquisition decisions. Provided performance data and analytic support for Advanced Technology Demonstrations (ATD),
		Distributed Interactive Simulation (DIS) projects and Advanced Warfighting Experiments (AWE) supporting Force XXI.
•	1546	_
		scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATDs/Advanced Concept
		Technology Demonstration s (ACTDs)/AWEs supporting Force XXI. Performed a validation and accreditation of algorithms portraying physical
		representation of systems in DIS to support the TRADOC Battle Labs and Study Centers.

Project M541

Total

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Exhibit R-2 (PE 0605706A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Managen	вироет Астіvітץ 6 - Management and Support	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis	PROJECT S M541
FY 1997 Planned Program: • 478 Develor	red Program: 478 Develop and certify system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater level studies.	d foreign systems to be used to support Army COEAs, fe	orce structure studies and theater
7.	Provide analyses of performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are performance analyses, risk assessments, and reliability, availability, and maintainability assessments for HQDA in support of milestone acquisition decisions. Provide performance data and analytic compact for ATD DIS maintain and AUE.	ss of materiel systems and tech base programs in support ssessments, and reliability, availability, and maintainabi	of HQDA, AMC, PEOs/ PMs and lity assessments for HQDA in
•	Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATD/ACTDs/AWEs supporting Force XXI. Will perform validation and accreditation of algorithms portraying physical representation of systems in Distributed Interactive	performance and combat effectiveness of conceptual, developmental, and fielded systems in a vascre-on-force analyses and for virtual and constructive simulations used in ATD/ACTDs/AWEs suggested accreditation of algorithms portraying physical representation of systems in Distributed Interactive	and fielded systems in a variety of in ATD/ACTDs/AWEs supporting in Distributed Interactive
•	Simulations to support the TKADOC Battle Labs and Study Centers. 910 Provide analyses of performance and combat effectiveness of materiel systems in support of the AAE. availability, and maintainability assessments for HODA in support of milestone acquisition decisions.	dy Centers. ss of materiel systems in support of the AAE. Included a	Included are performance analyses, reliability,
Total 99	9957		
FY 1998 Planned Program: • 463 Develot level st	ed Program: 463 Develop and certify system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater level studies.	d foreign systems to be used to support Army COEAs, for	orce structure studies and theater
73	Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: cost and operational effectiveness analyses, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, advanced technology demonstration analyses, advanced concept technology demonstration analyses. ATD DIS projects and technology demonstration analyses.	teriel systems and tech base programs in support of HQI I operational effectiveness analyses, system cost/perform echnology insertion, advanced technology demonstration analyses. Provide performance data and analytic support	DA, AMC, PEOs/ PMs and R&D nance tradeoffs, early technology n analyses, advanced concept for ATD DIS projects, and
. 12	AWEs supporting Force XXI. 1220 Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs supporting Force XXI. Perform verification validation and accreditation of algorithms northwest analyses.	nd combat effectiveness of conceptual, developmental, a liyses and for virtual and constructive simulations used in ation of algorithms northaning physical representation of	and fielded systems in a variety of n ATDs/ACTDs/AWEs supporting
Total 89	TRADOC Battle Labs and Study Centers.	anon or argornings pointaying physical representation of	systems in Dis to support the
Project M541	F	Page 6 of 9 Pages Exhi	Exhibit R-2 (PE 0605706A)

	RDT&E BUDGET ITEM JUSTIF	IFICATION SHEET (R-2 Exhibit)	(R-2 Exhib		DATE February 1997
BUDGET ACTIVITY 6 - Managemei	BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605706A Mate	ND TITLE	PE NUMBER AND TITLE OGO 5706A Materiel Systems Analysis	PROJECT N541
FY 1999 Planned Program: 433 Develo level st 7089 Analyz Centers	ogram: Develop and certify system performance data for U.S. and foreign systems to be used to support Army COEAs, force structure studies and theater level studies. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: COEA, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses technology insertion. ATD analyses, and technology broads are conduct of an analyses.	or U.S. and foreign systems ress of materiel systems and ress. COEA, system cost/perfor	to be used to suppleted to the suppleted base programments tradeoffs,	nort Army COEAs, force as in support of HQDA, early technology tradeof	structure studies and theater. AMC, PEOs/ PMs and R&D ffs, weapons mix analyses,
	support for ATD, DIS projects, and AWE supporting Force XXI. Support for ATD, DIS projects, and AWE supporting Force XXI. Develop methodologies to characterize the performance and combat effectiveness of conceptual, developmental, and fielded systems in a variety of scenarios and conditions for support of force-on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs supporting Force XXI. Perform verification, validation, and accreditation of algorithms portraying physical representation of systems in DIS to support the TRADOC Battle Labs and Study Centers.	porting Force XXI. strong soc, ACT of analyses, and recommoney base analyses. Troylog performance data and analyses aporting Force XXI. srformance and combat effectiveness of conceptual, developmental, and fielded systems in a variety on-force analyses and for virtual and constructive simulations used in ATDs/ACTDs/AWEs support and accreditation of algorithms portraying physical representation of systems in DIS to support the	veness of conceptual and constructions portraying phys	ual, developmental, and ve simulations used in A ical representation of sys	fielded systems in a variety of TDs/ACTDs/A WEs supporting stems in DIS to support the
1 0tal 0004					
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996 FY 1997 12128 10170 12465 9957 -415	FY 1998 10116	FY 1999 10094	
FY 1998 President's Budget Request	Budget Request	12050 9957	8993	8664	
Project M541		Page 7 of 9 Pages		Exhibit	Exhibit R-2 (PE 0605706A)
		1171			Item 120

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	R-2 Exhil	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE N	PE NUMBER AND TITLE 0605706A Mate	oe number and title 0605706A Materiel Systems Analysis	ystems /	Analysis		ه د	PROJECT M542
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M542 Major Systems Test, Design and Evaluation	0	0	20714	20011	18463	18851	19244	19586	Continuing	19586 Continuing Continuing

function under the US Army Operational Test and Evaluation Command. Also reflects the realignment of the Operational Evaluation Command (OEC) previously funded in A. Mission Description and Justification. This is not a new start. Funds were realigned from project D026 in support of the Army consolidation of the materiel evaluation OPTEC has a lead role in the planning and execution of the Army live fire tests through its test design and evaluation responsibilities. OEC plans and conducts independent operational evaluations to determine and report the effectiveness and suitability of Army systems in support of the OPTEC test and evaluation role in Army acquisition and milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive. OPTEC designs technical, developmental, and production tests conducts performance assessments for milestone acquisition evaluations of system tests (e.g. risk assessments and reliability, availability and maintainability assessments). OPTEC is the Army's technical evaluator of developmental systems and tests for all major Army acquisition programs. OPTEC provides technical evaluations for major to address factors pertinent to the decision process, such as: technical maturity, technical risk, technical system performance, producibility, supportability, etc. OPTEC the OMA appropriation. These realignments complete the consolidation of Army Evaluation. Project M542 funds the OPTEC mission of test design and evaluation. Information Systems Review Council (MAISRC), and In-Process Review (IPR) programs for their specific functional area. This project funds the salaries of civilian force development. Responsible for testing and evaluation and continuous evaluation of assigned Major Defense Acquisition Programs (MDAP), Major Automated employees assigned to the test design and evaluation missions. This project does not finance test facilities, test instrumentation or test equipment.

FY 1996 Accomplishments: Project funded under project D026.

FY 1997 Planned Program: Project funded under project D026.

FY 1998 Planned Program:

- evaluation plans for tests to be conducted in FY 99 through FY 03. These efforts include test design and evaluation planning for systems projected to undergoing major materiel change. System evaluations will support program milestone decision reviews during FY 98. Develops test design and experimental/prototype equipment or test instrumentation and integration of developmental and operational evaluations to support accelerated 5248 Provides test designs and evaluations for weapon systems, concepts, technologies that are either in demonstration or development phases or undergo live fire testing in FY 99-00. Early planning and analysis assures early identification of requirements for long lead procurement of acquisition and technology transition programs.
 - rovides funding for the Operational Evaluation Command staff and continuous evaluation mission. 15466 20714

Project M542

Total

Page 8 of 9 Pages

Exhibit R-2 (PE 0605706A)

RDT	RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	AKDOWN	(R-3) DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support	nt and Support	PE NUMBER AND TITLE 0605706A Mate	ਮਸਮ Materiel Sy	D TITLE Materiel Systems Analysis	PROJECT M542
FY 1999 Planned Program: 3493 Providence and anderg evaluate and acquisis acquisis acquisis Total 20011	es test designs and evaluations for we oing major materiel change. System ion plans for tests to be conducted in o live fire testing in FY 00-01. Early nental/prototype equipment or test instion and technology transition prograss funding for the Operational Evalua	as, concepts, technolo will support program ugh FY 04. These eff of analysis assures the and the integration and spaces and contin	gies that are eith milestone decisiorts include test early identificat of developmentauous evaluation	apon systems, concepts, technologies that are either in demonstration or development phases or evaluations will support program milestone decision reviews during FY 98. Develop test design and FY 00 through FY 04. These efforts include test design and evaluation planning for systems projected to planning and analysis assures the early identification of requirements for long lead procurement of strumentation and the integration of developmental and operational evaluations to support accelerated ms.	pment phases or svelop test design and g for systems projected to lead procurement of to support accelerated
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 199	FY 199	FY 1998 0	FY 1999 0	
FY 1998 President's Budget Request	Budget Request 0	0	20714	20011	
Change Summary Explanation: Funding: FY 98/99 - In Design and Evaluation (crease reflects the realignment of the Operat TD&E) mission from AMSAA to OPTEC.	nal Evaluation Commhese realignments con	and (OEC) from	tional Evaluation Command (OEC) from the OMA appropriation, and realignment of These realignments complete the consolidation of Army Evaluation under OPTEC.	realignment of the Test
Project M542		Page 9 of 9 Pages		Exhibit R-3 (PE 0605706A)	E 0605706A)
		1133			170





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (R	१-2 Exhi	bit)		DATE FeI	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE N	PE NUMBER AND TITLE 0605709A Expl	тте Exploitati	on of Fo	PE NUMBER AND TITLE 0605709A Exploitation of Foreign Items			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8413	7193	7762	4349	8287	8211	8645	8658	Continuing	Continuing
D650 Exploitation of Foreign Items	3315	3235	3342	0	0	0	0	0	0	9947
DC28 Acquisition/Exploitation of Threat Items	5098	3958	4420	4349	8287	8211	8645	8658	Continuing	Continuing

systems by analyzing innovations and technology in foreign materiel, and to make research and development more efficient by reducing uncertainties concerning potential force. This program enables the Army to conserve research and development funds and man-hours, enhance and improve U.S. designs, and provide realistic testing and training. These projects fund foreign materiel acquisitions and exploitations in support of the U.S. Army testing, training and intelligence programs required for general research and development and, since they are not allocable to specific R&D missions, are appropriately funded in Budget Activity 6. advanced technology threats to U.S. systems. The program also serves to develop counter measures and to support operational commanders with items for training the development, scientific and technical intelligence needs, operations and training. Primary program objectives are to reduce research and development times for U.S. Mission Description and Budget Item Justification: This is a continuing project for acquisition and exploitation of foreign materiel to support force and materiel

Page 1 of 5 Pages

Exhibit R-2 (PE 0605709A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	IFICATION SHEET (R-2 Exhibit)	1-2 Exhi	bit)		DATE Fe	February 1997	160
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605709A Exploitation of Foreign Items	TITLE Exploitati	on of For	eign Iter	Su		PROJECT D650
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D650 Exploitation of Foreign Items	3315	3235	3342	0	0	0	0	0	0	9947

A. Mission Description and Justification: Project D650 - Exploitation/Evaluation of Foreign Items: This project affords the Army's research and development (R&D) community an opportunity to acquire and exploit/evaluate worldwide leading edge technologies. This exploitation/evaluation of foreign technological capabilities is required in order to prevent technological surprise, eliminate or compress the R&D time cycle, contribute to R&D cost avoidance, enhance U.S. system and program designs, and to explore non-developmental items.

FY 1996 Accomplishments:

- Continued on-going project evaluations and exploitations identified prior to FY 96. New start FY 96 acquisitions of 25 projects. New start FY 96 evaluations and exploitations of foreign materiel and/or technologies. 1300
 - 1203
- - 3315 Total

FY 1997 Planned Program:

- Continue on-going project evaluations and exploitations identified prior to FY 97.
 - Plan new start FY 97 acquisitions of 23 projects. 1124
- Plan new start FY 97 evaluations and exploitations of foreign materiel and/or technologies. 735
- Small Business Innovation Research/Small Business Transfer Technology (SBIR/STTR) Programs.
 - Total

FY 1998 Planned Program:

- Continue on-going project evaluations and exploitations identified prior to FY 98. 1300
 - Plan new start FY 98 acquisitions of 24 projects. 1200
- Plan new start FY 98 evaluations and exploitations of foreign materiel and/or technologies. 842
 - Total

FY 1999 Planned Program: Project not funded in FY 99.

Project D650

Page 2 of 5 Pages

Exhibit R-2 (PE 0605709A)





RDT&E BUDGET ITEM JUS		TIFICATION SHEET (R-2 Exhibit)	(R-2 Exhib		DATE February 1997	97
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605709A Explo	ND TITLE Exploitatio	р тп∟е Exploitation of Foreign Items		PROJECT D650
B. Project Change Summary FY 97 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 3398 3493 -178	FY 1997 3304 3235 3235	FY 1998 3328 3342	F <u>Y 1999</u> 3289 0		
Change Summary Explanation: Funding: FY 1999 realigned to fund higher priority programs (-3289).	ed to fund higher prio	ority programs (-3	289).			
Project D650	Pa_{i}	Page 3 of 5 Pages		Exhibit R.	Exhibit R-2 (PE 0605709A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUS	TIFICAL	LION SI	HEET (R	2-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI	PE NUMBER AND TITLE 0605709A Expl	E NUMBER AND TITLE 1605709A Exploitation of Foreign Items	on of For	eign Iten	ns	a u	PROJECT DC28
(In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC28 Acquisition/Exploitation of Threat Items	5098	3958	4420	4349	8287	8211	8645	8658	8658 Continuing Continuing	Continuing

A. Mission Description and Justification: Project DC28 - Acquisition/Exploitation of Threat Items: This is a continuing project for acquisition and exploitation of foreign aids in the development of countermeasures to threat materiel and threat technology, and provides materiel for realistic testing and training. Acquisitions and exploitations materiel constituting potential advanced technology threats to U.S. systems. The primary aim of this project is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties concerning these threats. The project also answers general scientific and technical intelligence requirements, are executed according to an Army Foreign Materiel Review Board and with the approval of the Army Deputy Chief of Staff for Intelligence (DCSINT).

FY 1996 Accomplishments:

•	1950	50 Initiated, continued or completed exploitation projects on missile systems	f Army interest identified in the FY 96 Army FMP Exploitation Plan.
Total	5098	86	

FY 1997 Planned Program:

	ear Plan.
	P) Five Yo
	gram (FM
	Aateriel Prog
	y Foreign N
	Y 97 Arm
	ed in the F
	d prioritize
	identified an
	eat systems
	Acquire thre
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Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 96

FY 1998 Planned Program:

- Acquire threat systems identified and prioritized in the FY 98 Army Foreign Materiel Program (FMP) Five Year Plan.
- Initiate, continue or complete exploitation projects on ground systems of Army interest identified in the FY 98 Army FMP Exploitation Plan. 2320
- Initiate, continue or complete exploitation projects on missile systems of Army interest identified in the FY 98 Army FMP Exploitation Plan. 1200

Project DC28

Page 4 of 5 Pages

Exhibit R-2 (PE 0605709A)

³⁹⁵⁸ Total



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhib	DATE	February 1007
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605709A Expl	ND TITLE EXPloitation	f Foreign Items	PROJECT DC28
 FY 1999 Planned Program: 900 Acquire threat systems identified and prioritized in the FY 99 Army Foreign Materiel Program (FMP) Five Year Plan. 2300 Initiate, continue, or complete exploitation projects on ground systems of Army interest identified in the FY 99 Army FMP Exploitation Plan. 1149 Initiate, continue, or complete exploitation projects on missile systems of Army interest identified in the FY 99 Army FMP Exploitation Plan. 	FY 99 Army Foreigr ground systems of A missile systems of A	n Materiel Progran my interest identi my interest ident	ritized in the FY 99 Army Foreign Materiel Program (FMP) Five Year Plan. Projects on ground systems of Army interest identified in the FY 99 Army FMP Exploitation Plan. projects on missile systems of Army interest identified in the FY 99 Army FMP Exploitation Plan.	loitation Plan. sloitation Plan.
B. Project Change Summary FY 1996 FY 97 President's Budget Appropriated Value 5229 Adjustments to Appropriated Value	FY 1997 4043 3958	FY 1998 4429	<u>FY 1999</u> 4349	
	9000	0.744	4349	·
Project DC28	Page 5 of 5 Pages		Exhibit R-2 (PF 0605709A)	(400/2004)
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICA.	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	197
BODGI 6 - N	вироет Астіліту 6 - Management Support			PE NL 060	PE NUMBER AND TITLE 0605712A Supp	ITLE Upport o	PE NUMBER AND TITLE 0605712A Support of Operational Testing	onal Tes	ting		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	41078	49614	81672	68949	64255	64979	66331	66981	Continuing	Continuing
DV02	DV02 Test Directorates	14918	14631	37207	32453	31761	31683	31631	31703	Continuing	Continuing
D001	D001 OPTEC IOTE	9782	20355	22501	20743	15725	16525	16871	17267	Continuing	Continuing
D985	D985 Concepts Evaluation of Materiel	7738	10324	16739	10541	10490	10394	10943	10956	Continuing	Continuing
D987	D987 OPTEC Instrumentation Sustainment & Development	8640	4304	5225	5212	6279	6377	6886	7055	Continuing	Continuing

minor Advanced Warfighter Experiments (AWEs). Program growth in Project D985 reflects increased emphasis on accelerated acquisition methods. Program is also a first look at emerging technologies that have the potential to support the Army's Force XXI design needs. Project D987 provides for development and acquisition of non-major Mission Description and Budget Item Justification: This program finances the operational testing of developmental materiel systems. Its efforts are directed toward the support of operations required for use in general research and development (R&D). Project DV02 provides for the recurring costs of operating the test activities of the U.S. selected for funding are relatively low cost conceptual evaluations, with high potential for warfighting return on investment. Program provides direct support to battle lab and sustaining instrumentation necessary to attain and maintain the data collection and analysis capability to conduct credible and robust operational tests as demanded by the DoD and Congress. It provides for replacement and improvements of existing obsolete inventory and for the development of new technologies to keep abreast of new Acquisition Category I (ACAT I) major weapons systems which are programmed within the PE funding development for each system. Funding increase beginning in FY Army Operational Test and Evaluation Command (OPTEC). Increase starting in FY 1998 reflects restructure directed by OSD of manpower and funds for the Test and (TRADOC) battle labs and schools to evaluate emerging technologies and other equipment to help define Army mission needs and operational requirements. Projects weapon advancements. These projects fund operational testing and concept evaluation of materiel in support of the Army and DoD general research and development. 1997 is necessary to execute ACAT II-IV and joint test workload scheduled for FY 1997-1999. Project D985 enables U.S. Army Training and Doctrine Command programmed and budgeted in the OMA appropriation. Project D001 provides for direct operational and joint test costs incurred by OPTEC. Excludes funding for Evaluation Coordination Offices (TECO's), Operational Threat Support Activity (OTSA), Test and Evaluation Support Activity and test support funds previously Since they are not allocable to specific R&D missions, they are appropriately funded in Budget Activity 6.

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Exhibit R-2 (PE 0605712A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	260
BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605712A Support of Operational Testing	ritle support o	f Operat	ional Tes	ting		PROJECT DV02
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DV02 Test Directorates	14918	14631	37207	32453	31761	31683	31631	31703	31703 Continuing Continuing	Continuing

contracts, temporary duty, supplies and equipment of subordinate elements of the Test and Experimentation Command (TEXCOM): Airborne and Special Operations Test Directorate, Fort Bragg, NC; Air Defense Test Directorate, Fort Bliss, TX; Fire Support Test Directorate, Fort Sill, OK; and the Intelligence and Electronic Warfare Test materiel and force development test and experimentation (FDTE). Increase starting in FY 1998 reflects transfer of manpower and funds for the Test and Evaluation A. Mission Description and Budget Item Justification: Project DV02 - Test Directorates: This project finances recurring costs, including civilian pay, support Communications-Information Mission Area; Advanced Concepts). The primary mission of these test directorates is to conduct operational testing of developmental Coordination Offices (TECO's), Operational Threat Support Activity (OTSA), Test and Evaluation Support Activity and test support from the OMA appropriation. Directorate, Fort Huachuca, AZ and test directorates located at Fort Hood, TX (Aviation; Close Combat; Engineer/Combat Support; Command, Control, and

FY 1996 Accomplishments:

3202 Operational Costs for Fort Hood, TX Test Directorates
 2657 Operational Costs for Fort Sill, OK Test Directorate
 3045 Operational Costs for Fort Huachuca, AZ Test Directorate
 3087 Operational Costs for Fort Bragg, NC Test Directorate
 2927 Operational Costs for Fort Bliss, TX Test Directorate
 Total 14918

FY 1997 Planned Program:

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Operational Costs for Fort Huachuca, AZ Test Directorate Operational Costs for Fort Hood, TX Test Directorates Operational Costs for Fort Bragg, NC Test Directorate Operational Costs for Fort Bliss, TX Test Directorate Operational Costs for Fort Sill, OK Test Directorate 3674 2336 3020 2519 3023

Project DV02

Exhibit R-2 (PE 0605712A)

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8	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management Support	t Support	PE NUMBER AND TITLE 0605712A Supp	Support of	Э ПТLE Support of Operational Testing		PROJECT DV02
FY 1998 Planned Program: • 4442 Operation: • 2298 Operation: • 2604 Operation: • 2910 Operation: • 15097 Operation: • 1513 Operation: Total 37207	ogram: Operational Costs for Fort Hood, TX Test Directorates Operational Costs for Fort Sill, OK Test Directorate Operational Costs for Fort Huachuca, AZ Test Directorate Operational Costs for Fort Briss, NC Test Directorate Operational Costs for Fort Bliss, TX Test Directorate Operational Costs for Operational Threat Support Activity, Fort Bliss TX Operational Costs for Test and Evaluation Support Activity, Fort Hood, TX Operational Costs for Test and Evaluation Coordination Offices	ate vity, Fort Bliss TX ivity, Fort Hood, TX offices				
FY 1999 Planned Program:	Operational Costs for Fort Hood, TX Test Directorates Operational Costs for Fort Sill, OK Test Directorate Operational Costs for Fort Huachuca, AZ Test Directorate Operational Costs for Fort Bragg, NC Test Directorate Operational Costs for Fort Bliss, TX Test Directorate Operational Costs for Test and Evaluation Support Activity Operational Costs for Test and Evaluation Coordination Offices	ate ivity 1 Offices				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	ummary FY 1996 3udget 14851 15263 -345 3udget Request 14918	EY 1997 1 14944 3 14631 5 0 14631	FY 1998 15318 37207	FY 1999 15861 32453		
Change Summary Explanation: Funding: Increase star Test and Evaluation Co	Summary Explanation: Funding: Increase starting in FY 1998 reflects the reprogramming of manpower and funds previously programmed and budgeted in the OMA appropriation for Test and Evaluation Offices (TECO's), Operational Threat Support Activity (OTSA), test support funds, and Test and Evaluation Support Activity Test and Evaluation Coordination Offices (TECO's), Operational Threat Support Activity (OTSA), test support funds, and Test and Evaluation Support Activity Page 3 of 17 Pages Page 3 of 17 Pages	of manpower and fund reat Support Activity (previously prog OTSA), test sup	grammed and budgete port funds, and Test a	idgeted in the OMA approprize Test and Evaluation Support Exhibit R-2 (PE 0605712A)	riation for rt Activity. A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	160
BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605712A Supp	PE NUMBER AND TITLE 0605712A Support of Operational Testing	f Operat	ional Tes	sting		PROJECT D001
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D001 OPTEC IOTE	9782	20355	22501	20743	15725	16525	16871	17267	17267 Continuing Continuing	Continuing

actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness, suitability, execute ACAT II-IV and joint test workload scheduled for FY 1997-1999. Operational testing is conducted under conditions, as close as possible, to those encountered in testing on major and non-major materiel systems (ACAT II-IV), including Multi-Service systems (all ACATs) and Joint tests. It funds those costs directly attributable to A. Mission Description and Budget Item Justification: Project D001 - OPTEC IOTE: This project finances the direct costs of planning and conducting operational systems. Test funding for ACAT I systems is programmed with the PE funding development of each system. Funding increase beginning in FY 1997 is necessary to conducting an early user test and evaluation (EUTE), a limited user test (LUT), or an initial operational test and evaluation (IOTE) on major and non-major materiel and survivability of the system.

FY 1996 Accomplishments:

- SSP-S PI Strategic Sealift Program
- SEP 95-2 Soldier Enhancement Program
- JTAGS Joint Tactical Ground Station
- AMCS Aircrew Microclimate Conditioning System
 - AGES II Air Ground Engagement System II 61
- GLPS Gun Laying and Positioning System
- C2V PHASE I/II Command and Control Vehicle I/II
- SICPS RWS Standardized Integrated Command Post System Rigid Wall Shelter
 - SEP 96-1 Soldier Enhancement Program
 - SNS SNIPER Sniper Night Sight
- GBCS LIGHT Ground Based Common Sensor Light
- EPLRS Enhanced Position Location Reporting System 2234
 - Grizzly 607
- SSP Strategic Sealift Program 3775
- TTCS Tactical Terminal Control System
- JMARK Unit Maintenance Aerial Recovery Kit
- SLIST Joint Service Lightweight Integrated Suit Technology 2032

Project D001

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Exhibit R-2 (PE 0605712A)

	RDT&E BUDGET ITEM JUST	IFICATION SHEET (R-2 Exhibit)	DATE	February 1997	97
BUDGET ACTIVITY 6 - Managen	вирбет Астіуітү 6 - Management Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing	al Testing	PR C	PROJECT D001
FY 1997 Planned Program:	l Program:				
•	86 SSP - Strategic Sealift Program				
• 1472	_	ght			
-	150 ITAS - Improved Target Acquisition System				
•	49 ASTAMIDS/JT-UAV - Airborne Standoff Minefield Detection System, Unmanned Air Vehicle	ion System, Unmanned Air Vehicle			
•	•				
•	149 AIRTERM/KY-100 - Advanced Narrowband Digital Voice Terminal	Terminal			
•	9 IRV - Improved Recovery Vehicle				
•	3 ACPM - Aircrew Protective Mask				
• 1131					
• 2409					
•	1 M270A1 - Multiple Launch Rocket System				
351					
• 413					
• 213		ent			
• 838					
• 10065	5 CCTT (OT) - Close Combat Tactical Trainer				
4	42 IFCS ESIT - Improved Fire Control System Extended Syster	Extended System Integration Test			
587	AKMS - Automated Key Management Syste				
802					
• 197		ssured Connectivity System/SHF Tri-Band			
•	60 CCTT (TT) - Close Combat Tactical Trainer				
•		res			
• 132					
• 535					
•	Navigation, Integra	ination System			
•	4 LW-IOTE - Land Warrior				
•	4 NBCRS - Nuclear Biological and Chemical Reconnaissance System	System			
•	2 ER-MLRS - Extended Range-Multiple Launch Rocket System	, m			
•	19 SEP 97-1 - Soldier Enhancement Program (Machine Gun, Optic)	ptic)			
	4 SICPS RWS 3 - Standardized Integrated Command Post System Rigid Wall Shelter	stem Rigid Wall Shelter			
		ogy Transfer (SBIR/STTR) Programs.			
Total 20355					
Project D001	Page	Page 5 of 17 Pages	Exhibit R-2 (Exhibit R-2 (PE 06057134)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE Febr	February 1997
BUDGET ACTIVITY 6 - Management Support	ent Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing	1	PROJECT D001
TAY 4000 DI				
r I 1990 Flanneu Frogram:	rrogram:			
1/3				
99				
92	_			
197	•			
• 105	•	hase I		
• 1200	JWF JT&E - Joint Warfighter			
•	3 JSEAD JT&E - Joint Suppression of Enemy Air Defense			
•	3 JECSIM JT&E - Joint Electronic Combat Test Using Simulation	llation		
37		n System, Unmanned Air Vehicle		
34		nent		
• 500		eam		
• 2986	,	n Team		
71				
• 2850				
1981	PKG-11 AFATDS - Advanced Field Artillery Tactical Data System	a System		
• 2078				
821	SOFTACS / STAR-T - Special Operations Forces Tactical Assured Connectivity System/SHF Tri-Band	Assured Connectivity System/SHF Tri-Band		
086	•			
33	MACS - Live Fire - Modular Artillery Charge System			
• 2422	-,			
• 1064	•	Phase II		
• 1434	·	Phase III		
885	JADS JT&E Ph IV - Joint Advanced Disputed Simulation Phase IV	Phase IV		
• 264		mization		
• 2219	FBCB2 - Force Battle Command Brigade and Below			
Total 22501				
1000 M				
FY 1999 Flanned Frogram:	rogram:			
124				
09				
36				
427	JADS JT&E II - Joint Advanced Disputed Simulation Phase II	se II		
Project D001	Page	Page 6 of 17 Pages	Exhibit R-2 (PE 0605712A)	5712A)
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	RDT&E BUDGET ITEM JUSTIFICATIO	IIFICATION SHEET (R-2 Exhibit)	DATE February 1997	766
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing		PROJECT D001
FY 1999 Planned F 818 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	818 JADS JT&E III - Joint Advanced Disputed Simulation Phase III 1200 JWF - Joint Warfighter 8 JSEAD - Joint Supression of Enemy Air Defense 8 JSEAD - Joint Supression of Enemy Air Defense 8 JSEAM - Joint Electronic Combat Test Using Simulation 315 ER-MLRS - Extended Range-Multiple Launch Rocket System 320 ACSIET 97 - All Services Combat Identification Evaluation Team 321 ATPS - Advanced Tactical Parachute System 222 ACSIET 97 - All Services Combat Identification Evaluation Team 323 ATPS - Chemically and Biologically Protected Shelter 92 MACS Live Fire - Modular Artiliery Charge System 135 SIRFC - Suite Integrated Radio Frequency Countermeasures 2794 FBCB2 - Force Batle Command Brigade and Below 1793 MAZ70A1 - Multiple Launch Rocket System 401 Grizzly 993 HAB - Heavy Assault Bridge 71 ABE - Advanced Boresight Equipment 596 ASTAMIDS - UAV - Arthorne Standoff Minefield Detection System 400 BPIST (XM-7) TOTE) - Bradley Fire Support Team (XM7) 225 CK - Containerized Kitchen 1862 GBCS Heavy - Ground Based Common Sensor Heavy 135 BCIS - Battlefield Combat Identification System 2426 RCAS Block II - Reserve Component Automation System 2620 Digitization effort for procurement of FORCE XXI applique 2074	tem, Unm		
Project D001	Pag	Page 7 of 17 Pages	Exhibit R-2 (PE 0605712A)	

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RDT&E BUDGET ITEM JUST	TIFICATIO	TIFICATION SHEET (R-2 Exhibit	R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605712A Supp	Support of	E NUMBER AND TITLE DE05712A Support of Operational Testing	esting	PROJECT D001
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	EY 1996 16937 17413 -7631 9782	FY 1997 21021 20355 0 20355	<u>FY 1998</u> 22078 22501	EY 1999 18224 20743		

Change Summary Explanation:

Funding: FY 1996 decreased (-7631); (-5160) reprogrammed for higher priority requirements and contingency operations and (-2471) reprogrammed into project D987 for critical instrumentation requirements in support of near term operational tests and war fighting exercises.

FY 1999 increase (+2029) realigned to support evaluation of appliqués for Force XXI initiatives.

Project D001

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Exhibit R-2 (PE 0605712A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE Fet	February 1997	260
BUDGET ACTIVITY 6 - Management Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605712A Supp	TITLE Support o	PE NUMBER AND TITLE 0605712A Support of Operational Testing	ional Tes	ting	<u>а</u> Ш	PROJECT D985
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D985 Concepts Evaluation of Materiel	7738	10324	16739	10541	10490	10394	10943	10956	Continuing	10956 Continuing Continuing

the force around information requires major investment in information-age capabilities. Constructive, virtual, and live simulations are used to examine warfighting concepts emerging operational concepts that have the potential to support the Army's Force XXI design needs. As the Army moves toward Force XXI, the critical task of designing A. Mission Description and Budget Item Justification: Project D985 - Concepts Experimentation Program: The Concepts Experimentation Program (CEP) is a key equipment to conduct tests and experiments to determine military utility or potential to satisfy Army Doctrine, Training, Leader Development, Organization, Materiel and Soldiers (DTLOMS) needs. TRADOC battle labs build on initiatives with greatest potential payoff. Program is also used as a first look at emerging technologies and across doctrine, training, leader development, organizational design, materiel, and soldier systems domains. They cover all aspects of command and control, lethality, innovative tool which provides TRADOC battle labs and schools the ability to capitalize on emerging technology, emerging operational concepts, and new materiel initiatives. Program growth reflects increased emphasis on Force XXI initiatives and accelerated acquisition methods. Funds are used to acquire, lease or fabricate survivability, and tempo and are essential to technology insertion in future Army systems and force structure.

FY 1996 Accomplishments:

- Military Operations in Built-up Area
- Modeling in Corps Battle Simulations
- Army Company Info System (ARCIS) Interface w/Multi-Tech Automated Reader Card (MARC)
 - Generation II Soldier
- Pointman Sensor Enhancement
- Precision Delivery for Remote Warfare 00
 - Synthetic Theater of War 95
- Dismounted Combat Identification 25
 - Scout Laser Communications Soldier Power Requirements 95 24

 - Aided Target Recognitions 93
- Electronic Warfare (EW) Systems Effectiveness 50
- Joint Surveillance Target Attack Radar System (JSTARS)
- Interactive Distributed Early Entry Analysis Simulation/Force Projection Model
 - Direct Broadcast Satellite 350
- Rapidly Installed Breakwater System

Project D985

PLS-E Force XXI Tactical Wheeled Vehicle (TWV) Combat Multiplier

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Exhibit R-2 (PE 0605712A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management Support	Today,	PE NUMBER AND TITLE	1	PROJECT
	and deposit	vecs/ 12A Support of Operational Testing	lai iesting	D985
FY 1996 Accomp	FY 1996 Accomplishments: (continued)			
• 411				
• 150				
94				
100				
• 42				
96				
• 255	Force Protection			
96	Passive Sensor Fusion			
125	Interest Manager/Reflector for Intelligence, Artillery and Air Defense Artillery Systems	ir Defense Artillery Systems		
69	3rd Generation AN/VSS-2 Driver's Sight for M1A2			
• 150	Pointman Mine Detection			
86	Non-Lethal Technologies			
• 210	Laser Radar Targeting Systems (LATARS)			
91	Fly Ferret			
• 65	Global 24 hour Overhead Surveillance			
981	MOS Consolidation			
• 140	Dynamic Intelligence Preparation of the Battlefield (IPB)			
488	Signature Reduction Coatings			
• 55	Precision Delivery by Deployable Wing			
86	Early Entry Sustainment Sim/Interface			
325	Voice Recognition Prototype			
395	Classroom 21 Leadership Development			
310				
86	Advanced Command and Control Enroute System			
31	Asynchronous Transfer Mode (ATM)			
98	Central Tire Inflation System			
15	New Battery Technology			
• 12	Low Cost Anti-Armor Submunition 6-Degree of Freedom (LOCAAS 6-DOF)	LOCAAS 6-DOF)		
98	Dismounted Countermine			
55	Guidance Navigation and Control (GNC) for Guided Parafoil Aerial Delivery	il Aerial Delivery		
• 75	Desktop Simulation			
30	Canard Control System for Global Positioning System Guidance & Control Module for Artillery Projectile	ance & Control Module for Artillery Projectile		
Project D985	Page	Page 10 of 17 Pages	Exhibit R-2 (PE 0605712A)	
			EXIMINATION 14 L 00001 147	

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	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997	266
BUDGET ACTIVITY 6 - Managen	BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing		PROJECT D985
FY 1996 Accor	FY 1996 Accomplishments: (continued)			
٠	22 Information Distribution System (IDS) 2000 Operational Capability	apability		
٠	28 Enhanced Radar TPQ-37	•		
•	343 Motor Fire Control System			
Total 77	7738			
FY 1997 Planned Program:	d Program:			
•	115 MATTRACKS			
•	130 Encapsulating Foam for Cover and Assault Lane Breacher			
•	97 Skid Steer			
6	41 Light Assault Treadway Bridge			
•	70 Assault Breach Marking System			
•	5 Removable Ripper Tooth for the Combat Earthmover			
•	60 Field Deployable Soil Probe for Mobility Prediction			
•	160 Seismic Detection in Military Operations			
•	80 Modernized Cold Weather Road Construction Technology			
•				
•	50 Programmable Digital Radio (PDR) Aircraft Certification			
•	150 PDR Demonstration			
•	100 Simulations-Protect the Force/EADSIM			
•	125 Telepathy Battle Command			
•				
•	100 Multi-Variant Analysis Tool			
•	25 Rapid Runway Repair			
•	100 Force XXI Mobile Strike Force (MSF)			
. 3	392 Battle Damage Assessment (BDA) Variant to BAT			
•	199 Deep Integrated Battlefield Architecture for ATACMS IB			
с г	300 Common Launcher			
6	300 Beyond Visual Range Identification (BVRID)			
	275 Automation and Simulation Technology in the Classroom			
	298 Light Digital TOC - Phase I			
•	150 Dismounted Soldier Power Initiative			
•	186 Dismounted Combat Identification Phase IV			
Project D985	Page	Page 11 of 17 Pages	Exhibit B-2 (PE 0605712A)	





Per Nutseer Aut) TITLE		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
amed Program: (continued) 147 Multipurpose Mission Platform 158 Counterdrug 179 Counterdrug 171 Dismounded Image Transmission 237 Non-Lethal Technology 150 Lightweight Minefield and Obstacle Breacher 251 Military Operation in Urban Terrain (MOUT) 151 Countersmiper 152 Countersmiper 153 Military Operation in Urban Terrain (MOUT) 154 Countersmiper 155 Network Management and Transport Mission Platform 49 Modular Crowd Control Munition 45 Situational Awareness Technology in MOUT 45 Situational Awareness Technology in MOUT 46 Situational Awareness Technology in MOUT 47 Verbic Immobilization System 48 MOUSAF Logistics Concepts Simulation 49 Modular Crowd Contempts Simulation 40 Detection Signature Application Technology (DSAT) 40 Detection Signature Application Technology (DSAT) 40 Detection Signature Application Technology (DSAT) 41 Digital Diagnostics and Prognostics (DDAP) 42 Digital Diagnostics and Prognostics (DDAP) 43 Dissae Vectors 44 Personal Protection for Force XXIA Force Multiplier 45 Toward Repair System-Heavy (RS-H) 46 Personal Protection Simulation Admitiplier 47 Counted Synthetic Test and Training Assessment Range 48 Anticial Intelligence Communications Maintenance System 49 Articial Intelligence Communications Maintenance 40 DivisionBrigade Trainer - Surrogate Common Ground Station 41 Counted Synthetic Test and Training Assessment Range 42 DivisionBrigade Trainer - Surrogate Common Ground Station 48 Interactive Large Streen Display Prototype Testing 49 Active Dialogue on the Mover - Applications 40 Laser Radar Targeting Systems (LATARS) 419	BUDGET ACTIVITY 6 - Manageme	nt Support	PE NUMBER AND TITLE 0605712A Support of Operational	1
147 Multipurpose Mission Platform 173 Counterdrug 171 Dismounted Image Transmission 173 Non-Lethal Technology 175 Soldier Physiological Monitoring 176 Soldier Physiological Monitoring 177 Lightweight Minefaled and Obstacle Braecher 178 Lightweight Minefaled and Obstacle Braecher 179 Military Operations in Urban Terrain (MOUT) 170 Countersniper 170 Countersniper 171 Military Operations in Urban Terrain (MOUT) 172 Countersniper 173 Modular Crowd Control Munition 174 Modular Crowd Control Munition 175 Modular Crowd Control Munition 176 Multipurpose Sensor & Security Mission Platform 177 Situational Awareness Technology in MOUT 178 MoDSAF Logistics Concepts Simulation 179 Detection Signature Application Technology (DSAT) 170 Detection Signature Application Technology (DSAT) 171 Croward Repair System (LAS) Employment 172 Digital Diagnostics and Prognostics (DDAP) 173 Digital Diagnostics and Prognostics (DDAP) 174 Personal Protection for Force XXLa Force Multiplier 175 Forward Repair System (LAS) Employment 176 Forward Repair System-Heavy (FRS-H) 177 Combat Synthetic Test and Training Assessment Range 178 Laser Radar Targeting Systems (LATARS) 179 1790 1790 1790 1790 1790 1790 1790	FY 1997 Planned	Program: (continued)		
173 Counterdrug 171 Dismounded lange Transnission 172 In Dismounded lange Transnission 173 Non-Lethal Technology 165 Soldier Physiological Monitoring 176 Lightweight Minefield and Obstacle Breacher 177 Military Operations in Urban Terrain (MOUT) 178 Military Operations in Urban Terrain (MOUT) 179 Countensniper 170 Countensniper 171 Modular Crowd Control Munition Study 171 Modular Crowd Control Munition System 172 Situational Awareness Technology in MOUT 173 Mountenach Barlefield Viewing System 174 Mountenach Barlefield Viewing System 175 MODSAR Logistics Concepts Simulation 176 MODSAR Logistics Concepts Simulation 177 Lote Amoned Treatment and Transport Vehicle 178 MODSAR Logistics Corecepts Simulation 179 Digital Diagnostics and Prognostics (DDAP) 170 Lifetime Oil Filler 171 Lotad Handling System (LHS) Employment 172 Disease Vectors 173 Disease Vectors 174 Personal Protection for Force XXI-a Force Multiplier 175 Disease Vectors 176 Forward Repair System-Heavy (FRS-H) 177 Lotad Handling System-Heavy (FRS-H) 178 Disease Vectors 179 Personal Protection for Force XXI-a Force Multiplier 170 Forward Repair System-Heavy (FRS-H) 170 Lifetime Oil Filler 171 Combat Synthetic Test and Training Assessment Range 172 Division/Brigade Trainer - Surrogate Common Ground Station 178 Artificial Intelligence Communications Maintenance System 179 Laser Radar Targeting Systems (LATARS) 1790 1790	• 147	Multipurpose Mission Platform		
237 Non-Lefall Technology 237 Non-Lefall Technology 238 Solditer Physiological Monitoring 150 Lightweight Minefield and Obstacle Breacher 235 Solditer Physiological Monitoring 151 Lightweight Minefield and Obstacle Breacher 235 Military Operations in Urban Terrain (MOUT) 152 Countersinger 153 Network Management and Troubleshooting for Tactical Internet 154 Multipurpose Strisor & Sceurity Mission Platform 155 Multipurpose Strisor & Sceurity Mission Platform 156 Multipurpose Strisor & Sceurity Mission Platform 157 Multipurpose Strisor & Strisor 158 MARC-EPW Integration With Force XXI Applique 159 MoDSAF Logistics Concepts Simulation 160 Detection Signature Application Technology (DSAT) 161 Lifetime Oil Filter 162 MoDSAF Logistics Concepts Simulation 163 Armored Treatment and Transport Vehicle 164 Lifetime Oil Filter 165 Digital Diagnostics and Prognostics (DDAP) 166 Lifetime Oil Filter 166 Mod Handling System (LHS) Employment 177 Disease Vectors 178 Personal Protection for Force XXI:a Force Multiplier 179 Personal Protection for Force XXI:a Force Multiplier 170 Forward Repair System-Heavy (FRS-H) 170 Forward Repair System-Heavy (FRS-H) 171 Combat Synthetic Test and Training Assessment Range 172 Onward Repair Training Systems (LATARS) 179 Combat Synthetic Test and Training Assessment Range 170 Forward Repair Training Systems (LATARS) 170 Forward Repair Training Systems (LATARS) 171 Combat Synthetic Test and Training Assessment Range 172 Laser Radar Targeting Systems (LATARS) 1790	• 173	Counterdrug		
165 Soldier Physiological Monitoring 168 Soldier Physiological Monitoring 150 Lightweight Minefield and Obstacle Breacher 151 Lightweight Minefield and Obstacle Breacher 152 Military Operations in Urban Terrain (MOUT) 152 Countrolated Penetration Ammunition Store 153 Multipurpose Sensor & Security Mission Platform 154 Modular Crowd Control Munition 155 Modular Crowd Control Munition 160 Multipurpose Sensor & Security Mission Platform 171 Situational Awareness Technology in MOUT 172 Modular Crowd Control Munition 173 Situational Awareness Technology (DSAT) 174 Penetration Signature Application Technology (DSAT) 175 Armored Treatment and Transport Vehicle 176 Armored Treatment and Transport Vehicle 177 Armored Treatment and Transport Vehicle 178 Disease Vectors 179 Personal Protection for Porce XXI-a Force Multiplier 170 HEMITT Load Handling System (LHS) Employment 171 Poward Repair System-Heavy (FRS-H) 172 Disease Vectors 173 Disease Vectors 174 Personal Protection for Porce XXI-a Force Multiplier 175 Artificial Intelligence Communications Maintenance System 176 Artificial Intelligence Communications Maintenance System 177 Artificial Intelligence Communications Maintenance System 178 Artificial Intelligence Communications Maintenance System 179 Artificial Intelligence Communications Maintenance System 170 Artificial Intelligence Communications Maintenance System 171 Contrad Synthetic Test and Tataing Assessment Raage 172 Division/Brigade Trainer - Surrogate Common Ground Station 173 Active Dialogue on the Move: Applications 174 Active Dialogue on the Move: Applications 175 Active Dialogue on the Move: Applications 176 Active Dialogue on the Move: Applications 177 Active Dialogue on the Move: Applications 178 Active Dialogue on the Move: Applications 179 Active Dialogue on the Move: Applications 179 Active Dialogue on the Move: Applications	• 171	Dismounted Image Transmission		
165 Soldier Physiological Monitoring 167 Lightweight Minefield and Obstacle Breacher 128 Military Operations in Urban Terrain (MOUT) 127 Countersnipe 16 Countorslope 17 Countersnipe 18 Network Management and Troubleshooting for Tactical Internet 19 Modular Crowd Control Munition 28 Driver Viewer EnhancementBattlefield Viewing System 29 Driver Viewer EnhancementBattlefield Viewing System 20 Detection Signature Application System 210 MODSAF Logistics Concepts Simulation 211 Digital Diagnostics and Prognostics (DDAP) 220 Lifetime Oil Filter 23 Digital Diagnostics and Prognostics (DDAP) 240 Petsonal Protection for Force XXI-a Force Multiplier 25 Amored Treament and Transport Vehicle 26 Amored Treament and Transport Vehicle 27 Personal Protection for Force XXI-a Force Multiplier 28 Digital Diagnostics and Transport Vehicle 29 Forward Repair System-Heavy (FRS-H) 240 PL-S-E - Integrated TWV Movement Tracking 27 Artificial Intelligence Communications Maintenance System 28 Interactive Large Screen Display Prototype Testing 29 Actificial Intelligence Communications 20 Laser Radar Targeting Systems (LATARS) 20 Laser Radar Targeting Systems (LATARS) 2190	• 237	Non-Lethal Technology		
150 Lightweight Minefield and Obstacle Breacher 133 Military Operations in Urban Terrain (MOUT) 127 Countersniper 65 Countersniper 66 Countersniper 67 Countersniper 68 Controlled Penetration Ammunition Study 118 Network Management and Troubleshooting for Tactical Internet 69 Multipurpose Sensor & Security Mission Platform 90 Multipurpose Sensor & Security Mission Platform 91 Multipurpose Sensor & Security Mission Platform 92 Situational Awareness Technology in MOUT 93 Dehical Enhancement/Battleffeld Viewing System 94 Vehicle Immobilization system 95 MARC-EPW Integration with Force XXI Appliqué 96 Amorred Treament and Transport Vehicle 97 Amorred Treament and Transport Vehicle 98 Amorred Treament and Transport Vehicle 99 Detection Signature Application Technology (DSAT) 90 Detection Signature Application Technology (DSAT) 91 Digital Diagnostics and Prognostics (DDAP) 91 Lifetime Oil Filter 92 Digital Diagnostics and Prognostics (DDAP) 93 Digital Diagnostics and Prognostics (DNAP) 94 Personal Protection for Force XXI-a From Maintenance System 95 Artificial Intelligence Communications Maintenance System 96 Artificial Intelligence Communications Maintenance 97 A Personal Synthetic Test and Training Assessment Range 98 Interactive Large Screen Display Prototype Testing 99 Active Dialogue on the Move: Applications 90 Active Dialogue on the Move: Applications 90 Laser Radar Targeting Systems (LATARS) 90 PLS-F	• 165	Soldier Physiological Monitoring		
Military Operations in Urban Terrain (MOUT) Countersniper Counteration Ammunition Study Scontrolled Penetration Ammunition Study Network Management and Troubleshooting for Tactical Internet Multipurpose Sensor & Security Mission Platform Multipurpose Sensor & Security Mission Platform Multipurpose Sensor & Security Mission Platform Modular Crowd Control Munition Situational Awareness Technology in MOUT Vehicle Immobilization System MARC-EPW Integration with Force XXI Appliqué MODSAF Logistics Concepts Simulation Technology (DSAT) Compact Treatment and Transport Vehicle MODSAF Logistics Concepts Simulation Technology (DSAT) Compact Treatment and Transport Vehicle Jigital Diagnostics and Prognostics (DDAP) Lifetime Oil Filter Disease Vectors Personal Protection for Force XXI-a Force Multiplier Forward Repair System-Heavy (FRS-H) Personal Protection for Force XXI-a Force Multiplier To Forward Repair System-Heavy (FRS-H) Artificial Intelligence Communications Maintenance System Hall Intelligence Communications Maintenance System Artificial Intelligence Communications Modern Artificial Intelligence Communications Maintenance System Artificial Intelligence Communications Modern Artificial Intelligence Screen Display Prototype Testing Active Division/Brigade Trainer - Surrogate Common Ground Station Stative Division/Brigade Train	• 150	Lightweight Minefield and Obstacle Breacher		
127 Countersniper 6 Sontrolled Penetration Ammunition Study 118 Network Management and Troubleshooting for Tactical Internet 60 Multipurpose Sensor & Security Mission Platform 9 Modular Crowd Control Munition 45 Situational Awareness Technology in MOUT 46 Situational Awareness Technology in MOUT 47 Situational Awareness Technology in MOUT 48 MARC-EPW Integration with Force XXI Appliqué 48 Driver Viewer Enhancement/Batlefield Viewing System 49 Wehicle Immobilization System 40 Vehicle Enhancement/Batlefield Viewing System 41 Detection Signature Application Technology (DSAT) 42 Armored Treatment and Transport Vehicle 43 Digital Diagnostics and Prognostics (DDAP) 44 Disease Vectors 45 Disease Vectors 46 Personal Protection for Force XXI-a Force Multiplier 47 Forward Repair System-Heavy (FRS-H) 48 Personal Protection for Force XXI-a Force Multiplier 47 Forward Repair System-Heavy (FRS-H) 48 Personal Protection for Force XXI-a Force Multiplier 47 Forward Repair System Chaming Assessment Range 47 Artificial Intelligence Communications Maintenance System 47 Artificial Intelligence Communications Maintenance System 47 Combat Synthetic Test and Training Assessment Range 47 Active Dialogue on the Move: Applications 48 Interactive Large Screen Display Prototype Testing 48 Interactive Large Screen Display Prototype Testing 40 Laser Radar Targeting Systems (LATARS) 40 Laser Radar Targeting Systems (LATARS) 4190	• 235	Military Operations in Urban Terrain (MOUT)		
Controlled Penetration Ammunition Study Network Management and Troubleshooting for Tactical Internet Multipurpose Sensor & Security Mission Platform Multipurpose Sensor & Security Mission Platform Situational Awareness Technology in MOUT Wehicle Immobilization System MARC-EPW Integration with Force XXI Appliqué MARC-EPW Integration with Force XXI Appliqué MODSAF Logistics Concepts Simulation 100 Detection Signature Application Technology (DSAT) Amored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 75 Disease Vectors 76 Artificial Intelligence Communications Maintenance System 77 Artificial Intelligence Communications Maintenance System 78 Artificial Intelligence Communications Maintenance System 79 PLS-E - Integrated TWV Movement Tracking 70 Artificial Intelligence Communications Maintenance System 710 Combat Synthetic Test and Training Assessment Range 7210 Division/Brigade Trainer - Surrogate Common Ground Station 2221 Division/Brigade Trainer - Surrogate Common Ground Station 2222 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages Page I2 of 17 Pages	• 127	Countersniper		
115 Network Management and Troubleshooting for Tactical Internet 60 Multipurpose Sensor & Security Mission Platform 49 Modular Crowd Control Munition 45 Situational Awareness Technology in MOUT 40 Vehicle Immobilization System 40 Vehicle Immobilization System 41 Solivation Technology in MOUT 42 MARC-EPW Integration with Force XXI Appliqué 42 Driver Viewer Enhancement/Battlefield Viewing System 43 Driver Viewer Enhancement/Battlefield Viewing System 44 Detection Signature Application Technology (DSAT) 62 Armored Treatment and Transport Vehicle 64 Armored Treatment and Transport Vehicle 65 Armored Treatment and Prognostics (DDAP) 66 Armored Treatment and Prognostics (DDAP) 67 Armored Treatment and Prognostics (DDAP) 68 Armored Treatment and Transport Vehicle 69 Armored Treatment and Transport Vehicle 60 HEMITT Load Handling System (LHS) Employment 61 Lifetime Oil Filter 61 Armored Treatment and Transport Vehicle 62 Armored Treatment and Transport Vehicle 63 Artificial Intelligence Communications Maintenance System 64 Personal Protection for Force XXI-a Force Multiplier 65 Artificial Intelligence Communications Maintenance System 66 Artificial Intelligence Communications Maintenance System 67 Combat Synthetic Test and Training Assessment Range 68 Interactive Large Screen Display Prototype Testing 69 Active Dialogue on the Move: Applications 60 Laser Radar Targeting Systems (LATARS) 61 Laser Radar Targeting Systems (LATARS) 62 Laser Radar Targeting Systems (LATARS)	• 65	Controlled Penetration Ammunition Study		
49 Multipurpose Sensor & Security Mission Platform 49 Modular Crowd Control Munition 45 Situational Awareness Technology in MOUT 40 Vehicle Immobilization System 55 MARC-EPW Integration with Force XXI Appliqué 65 MARC-EPW Integration with Force XXI Appliqué 66 Armored Treatment and Transport Vehicle 67 Armored Treatment and Prognostics (DDAP) 68 Amored Treatment and Prognostics (DDAP) 69 Lifetime Oil Filter 60 HEMITT Load Handling System (LHS) Employment 60 HEMITT Load Handling System (LHS) Employment 61 Digital Diagnostics and Prognostics (DDAP) 61 Lifetime Oil Filter 62 Armored Repair System-Heavy (FRS-H) 63 Lifetime Oil Filter 64 Personal Protection for Force XXI-a Force Multiplier 65 Armored Repair System-Heavy (FRS-H) 66 Linegrated TWV Movement Tracking 67 Personal Protection for Force XXI-a Force Multiplier 68 Artificial Intelligence Communications Maintenance System 69 Artificial Intelligence Communications Maintenance System 60 Division/Brigade Trainer - Surrogate Common Ground Station 61 Systems (LATARS) 62 Laser Radar Targeting Systems (LATARS) 63 Laser Radar Targeting Systems (LATARS) 64 Personal Protection for Force XXI-a Force Multiplier 65 Laser Radar Targeting Systems (LATARS) 66 Laser Radar Targeting Systems (LATARS)	• 115	Network Management and Troubleshooting for Tactical Ir	Itemet	
49 Modular Crowd Control Munition 45 Situational Awareness Technology in MOUT 46 Vehicle Immobilization System 48 Vehicle Immobilization System 48 Driver Viewer Enhancement/Battlefield Viewing System 49 Vehicle Immobilization System 40 Vehicle Immobilization with Force XXI Appliqué 41 Driver Viewer Enhancement/Battlefield Viewing System 42 MARC-EPW Integration with Force XXI Appliqué 42 Armored Treatment and Transport Vehicle 43 Digital Diagnostics and Prognostics (DDAP) 44 Digital Diagnostics and Prognostics (DDAP) 45 Disease Vectors 46 PEMIT Load Handling System (LHS) Employment 47 Personal Protection for Force XXI-a Force Multiplier 48 Personal Protection for Force XXI-a Force Multiplier 49 PLS-E - Integrated TWV Movement Tracking 40 FLS-E - Integrated TWV Movement Tracking 41 Combat Synthetic Test and Training Assessment Range 420 Division/Brigade Trainer - Surrogate Common Ground Station 43 Active Dialogue on the Move: Applications 44 Active Dialogue on the Move: Applications 50 Laser Radar Targeting Systems (LATARS) 51 Laser Radar Targeting Systems (LATARS) 52 Laser Radar Targeting Systems (LATARS)	09	Multipurpose Sensor & Security Mission Platform		
45 Situational Awareness Technology in MOUT 40 Vehicle Immobilization System 41 Situational Awareness Technology in MOUT 42 Wehicle Immobilization System 43 Brivev Viewer Enhancement/Battlefield Viewing System 44 MODSAF Logistics Concepts Simulation 45 MARC-EPW Integration with Force XXI Applique 46 MODSAF Logistics Concepts Simulation 47 Armored Treatment and Transport Vehicle 47 Digital Diagnostics and Prognostics (DDAP) 48 Disease Vectors 49 Personal Protection for Force XXI-a Force Multiplier 40 Forward Repair System-Heavy (FRS-H) 40 PLS-E - Integrated TWV Movement Tracking 47 Forward Repair System-Heavy (FRS-H) 48 Artificial Intelligence Communications Maintenance System 47 Combat Synthetic Test and Training Assessment Range 47 Combat Synthetic Test and Training Assessment Range 47 Combat Synthetic Test and Training Assessment Range 48 Interactive Large Screen Display Prototype Testing 48 Active Dialogue on the Move: Applications 50 Laser Radar Targeting Systems (LATARS) 51 Pages 12 of 17 Pages	• 49	Modular Crowd Control Munition		
40 Vehicle Immobilization System 38 Driver Viewer Enhancement/Battlefield Viewing System 55 MARC-EPW Integration with Force XXI Appliqué 126 MODSAF Logistics Concepts Simulation 100 Detection Signature Application Technology (DSAT) 62 Armored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 75 Disease Vectors 76 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 2190	• 45	Situational Awareness Technology in MOUT		
28 Driver Viewer Enhancement/Battleffeld Viewing System 55 MARC-EPW Integration with Force XXI Applique 126 MODSAF Logistics Concepts Simulation 130 Detection Signature Application Technology (DSAT) 62 Armored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 75 Pisease Vectors 76 Forward Repair System-Heavy (FRS-H) 77 Porward Repair System-Heavy (FRS-H) 78 Personal Protection for Force XXI-a Force Multiplier 79 PLS-E - Integrated TWV Movement Tracking 710 PLS-E - Integrated TWV Movement Tracking 711 Combat Synthetic Test and Training Assessment Range 710 Division/Brigade Trainer - Surrogate Common Ground Station 711 Combat Synthetic Test and Training Prototype Testing 712 Division/Brigade Trainer - Surrogate Common Ground Station 713 Division/Brigade Trainer - Surrogate Common Ground Station 714 Combat Synthetic Test and Training Assessment Range 715 Active Dialogue on the Move: Applications 716 Laser Radar Targeting Systems (LATARS) 717 Pages 12 of 17 Pages	• 40	Vehicle Immobilization System		
MARC-EPW Integration with Force XXI Appliqué MODSAF Logistics Concepts Simulation Detection Signature Application Technology (DSAT) Amored Treatment and Transport Vehicle Jabel Diggiostics and Prognostics (DDAP) Lifetime Oil Filter Ulfetime Oil Filter Disease Vectors Disease Vectors The Personal Protection for Force XXI-a Force Multiplier Personal Protection for Force XXI-a Force Multiplier Forward Repair System-Heavy (FRS-H) PLS-E - Integrated TWV Movement Tracking Artificial Intelligence Communications Maintenance System Combat Synthetic Test and Training Assessment Range Combat Synthetic Test and Training Assessment Range Division/Brigade Trainer - Surrogate Common Ground Station Artificial Intelligence Communications Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages Laser Radar Targeting Systems (LATARS)	38	Driver Viewer Enhancement/Battlefield Viewing System		
126 MODSAF Logistics Concepts Simulation 100 Detection Signature Application Technology (DSAT) 62 Armored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 75 Personal Protection for Force XXI-a Force Multiplier 76 Forward Repair System-Heavy (FRS-H) 77 Pusses Vectors 78 Personal Protection for Force XXI-a Force Multiplier 79 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 28 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages	• 55	MARC-EPW Integration with Force XXI Applique		
100 Detection Signature Application Technology (DSAT) 62 Armored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 75 Disease Vectors 76 Forward Repair System-Heavy (FRS-H) 77 Personal Protection for Force XXI-a Force Multiplier 78 Personal Protection for Force XXI-a Force Multiplier 79 Pusser - Integrated TWV Movement Tracking 70 Pusser - Integrated TWV Movement Tracking 71 Combat Synthetic Test and Training Assessment Range 720 Division/Brigade Trainer - Surrogate Common Ground Station 736 Active Dialogue on the Move: Applications 737 Active Dialogue on the Move: Applications 738 Laser Radar Targeting Systems (LATARS) 749 750 760 777 777 778 778 779 779 770 770 770 770 770 770 770 770	• 126	MODSAF Logistics Concepts Simulation		
62 Armored Treatment and Transport Vehicle 132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 76 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	100	Detection Signature Application Technology (DSAT)		
132 Digital Diagnostics and Prognostics (DDAP) 10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 70 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	• 62	Armored Treatment and Transport Vehicle		
10 Lifetime Oil Filter 200 HEMITT Load Handling System (LHS) Employment 73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 76 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages	• 132	Digital Diagnostics and Prognostics (DDAP)		
 HEMITT Load Handling System (LHS) Employment Disease Vectors Personal Protection for Force XXI-a Force Multiplier Forward Repair System-Heavy (FRS-H) Forward Repair System-Heavy (FRS-H) PLS-E - Integrated TWV Movement Tracking Artificial Intelligence Communications Maintenance System Combat Synthetic Test and Training Assessment Range Division/Brigade Trainer - Surrogate Common Ground Station Division/Brigade Trainer - Surrogate Common Ground Station Active Dialogue on the Move: Applications Active Dialogue on the Move: Applications Laser Radar Targeting Systems (LATARS) 	• 10	Lifetime Oil Filter		
73 Disease Vectors 74 Personal Protection for Force XXI-a Force Multiplier 76 Forward Repair System-Heavy (FRS-H) 277 Forward Repair System-Heavy (FRS-H) 278 Artificial Intelligence Communications Maintenance System 279 Artificial Intelligence Communications Maintenance System 270 Artificial Intelligence Common Ground Station 271 Combat Synthetic Test and Training Assessment Range 272 Division/Brigade Trainer - Surrogate Common Ground Station 273 Interactive Large Screen Display Prototype Testing 274 Active Dialogue on the Move: Applications 275 Laser Radar Targeting Systems (LATARS) 276 Laser Radar Targeting Systems (LATARS)	• 200	HEMITT Load Handling System (LHS) Employment		
74 Personal Protection for Force XXI-a Force Multiplier 70 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	• 73	Disease Vectors		
70 Forward Repair System-Heavy (FRS-H) 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	74	Personal Protection for Force XXI-a Force Multiplier		
 240 PLS-E - Integrated TWV Movement Tracking 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 	07	Forward Repair System-Heavy (FRS-H)		
 150 Artificial Intelligence Communications Maintenance System 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 	• 240	PLS-E - Integrated TWV Movement Tracking		
 471 Combat Synthetic Test and Training Assessment Range 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190 	• 150	Artificial Intelligence Communications Maintenance Syste	E	
 220 Division/Brigade Trainer - Surrogate Common Ground Station 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190 	• 471	Combat Synthetic Test and Training Assessment Range		
 288 Interactive Large Screen Display Prototype Testing 305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190 	• 220	Division/Brigade Trainer - Surrogate Common Ground Sta	tion	
305 Active Dialogue on the Move: Applications 20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	288	Interactive Large Screen Display Prototype Testing		
20 Laser Radar Targeting Systems (LATARS) Page 12 of 17 Pages 1190	305	Active Dialogue on the Move: Applications		
Page 12 of 17 Pages 1190	• 20	Laser Radar Targeting Systems (LATARS)		
	Project D985	$Pa_{\mathcal{B}}$		hibit R-2 (PE 0605712A)
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R	RDT&E BUDGET ITEM JUSTIFICATI	IFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it) DATE	February 1997
BUDGET ACTIVITY 6 - Management Support	Support	PE NUMBER AND TITLE 0605712A Supp	D TITLE Support of	ਹ ਜπ∟E Support of Operational Testing	
FY 1997 Planned Program: (continued) 90 Virtual Prototype of 56 Dynamic Collective AWEs for division/c 1806 Division XXI AWE 252 Small Business Innor	ogram: (continued) Virtual Prototype of Small Package Sort Facility Dynamic Collective Management Tool AWEs for division/corps level experiments will start up in FY97 and continue in FY 98 and out. Division XXI AWE Support. Development and evaluation of digital training products. Simulation, experimentation and analytical support. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	n FY97 and continu on of digital trainin nnology Transfer (S	e in FY 98 and c g products. Sim BIR/STTR) Prog	ut. ılation, experimentation and grams.	l analytical support.
FY 1998 Planned Program:	ogram: Test and Experimentation initiatives continue based on the results of the FY 1997 Concepts Experimentation Program Continue Division XXI AWE Support. Experimentation to examine Division level digital connectivity to validate digital training products. Simulation and analysis to validate doctrine, training, leader development, organization, material, and soldier insights that will fuel Army investments in FY 99-FY 06.	e results of the FY o examine Division der development, or	1997 Concepts E level digital con ganization, mate	xperimentation Program nectivity to validate digital t rial, and soldier insights that	training products. t will fuel Army investments
FY 1999 Planned Program:	ogram: Test and Experimentation initiatives continue based on the results of the FY 1998 Concepts Experimentation Program	e results of the FY	1998 Concepts E	xperimentation Program	
B. Project Change Summary FY 1997 President's Budget Appropriated Value	mmary FY 1996 dget 7738	FY 1997 10545 10324	FY 1998 16776	FY 1999 10551	
Adjustments to appropriated Value FY 1998 President's Budget Request	iated Value dget Request 7738	10324	16739	10541	
Project D985	Pa	Page 13 of 17 Pages		Exhibit R-2	Exhibit R-2 (PE 0605712A)
		1101			Ifem 122





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE	February 1997	797
BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605712A Support of Operational Testing	TITLE Jubbort o	f Operat	ional Tes			PROJECT D987
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D987 OPTEC Instrumentation Sustainment & Development	8640	4304	5225	5212	6279	6377	6886		7055 Continuing Continuing	Continuing

The Mobile Automated Instrumentation Suite (MAIS) will soon be fielded in FY 1997 that will serve as a platform for integrating new instrumentation capability in support the battlefield continues, this effort allows OPTEC to modernize and develop its non-major instrumentation allowing it to be less intrusive, more reliable and more robust in independent initiatives that lead to improved command and control, increased mobility, and expanded remote data collection at various tactical sites with transmit capability terms of integrating combat simulation capability into operational tests. The goal is to expand measurement and test control capability while still reducing future test costs. capture test data at greater rates and increased volumes and then to reduce the information rapidly to only those essential to effectively evaluate the test. As digitization of to central receiving, control, and evaluation stations at various test directorates. These directorates are located at Fort Hood, TX; Fort Bliss, TX; Fort Huachuca, AZ; Fort technical upgrade and maintainability of essential instrumentation to achieve cost effective data collection, telemetry, and processing capability for support of robust and of Real-Time Casualty Assessment (RTCA) which measures simulated attrition of forces. This project supports multiple efforts associated with MAIS and of separate, credible operational tests as required by the DoD and Congress. Increased sophistication of new weapon and communication and control systems demand the need to A. Mission Description and Budget Item Justification: Project D987 - OPTEC Instrumentation Sustainment & Development: This project provides for the Sill, TX; and Fort Bragg, NC

FY 1996 Accomplishments:

Acquired/modified instrumentation to support ACAT I, ACAT II - IV, and Multi-Service tests and acquired equipment/software to provide interim RTCA capability to support tests requiring RTCA

- Fiberoptics Range Network

 - improved Field Data Collector 504
- High Performance Aircraft Tracking & Recording System High-Speed Video Systems
 - Mobile Command Post 250
- Multimedia Data Transfer System 397
- Video Telemetry and Recording System 397
- Automated and Intelligence/Electronic Warfare Test System (AI/EWTS) External Modulation Sources
- Mobile TEXCOM Experimentation Center (MTEC) Real Time Casualty Assessment (RTCA) Capability 2041
 - MAIS/FDC Interface
- MAIS Operational Test
- Fire Support Automated Test Set (FSATS)

Project D987

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Exhibit R-2 (PE 0605712A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	997
BUDGET ACTIVITY 6 - Management Support	nt Simport	DENUMBER AND TITLE		PROJECT
Tampa 4 4001 VA	1006 Accomplishmenter (constituted)		Selling	1381
57	Infrared Seeker Data Collection Station			
• 151	GPS Receiver - Global Positioning System Receiver			
• 564	Threat Aircraft (Mi-17 Hip "H") for OTSA			
• 125	Airborne Position Location System			
• 200	MAIS/MTEC Merger			
• 250	FORTS Engineering Study - Force XXI Operations, Rehearsal and Test Support Engineering Study	arsal and Test Support Engineering Study		
• 250	FORT - JANUS Suite - FORT - Battalion/Brigade Level Real-Time Integrated Battleffeld Computer/Graphic Simulation Suite	keal-Time Integrated Battlefield Computer/Graphic Sim	ulation Suite	
20	Xybion GPS Receiver			
15	Field Hardened Pentium Processor			
• 615	High Performance Aircraft Tracking Recording System			
95	VTRS/BIT Sync Cards - Video Telemetry and Recording System/Binary Digit	System/Binary Digit		
• 64	VTRS Receiver Tunable C-Band		-	
• 21	Computer, Cyber Research			
61	IGI POD Racks for Storage - Inertial Gps Integration			
• 85	Mobile Command Post			
• 85	Video Telemetry and Recording System (VTRS)			
Total 8640				
T. 10 FOOT 180				
FY 1997 Planned Program:	rogram:			
009	VTRS			
• 400	Multimedia Data Transfer System			
• 125	High-Speed Video Systems			
002	MAIS/FDC Interface			
• 200	Fiberoptic Range Network			
373	MTEC/MAIS Merger			
• 330	AI/EWTS First Generation Upgrade			
• 556	Hi-Speed Telemetry System			
• 150	Data Collection Vehicles			
• 198	OPT V2 - Operational Test Perceptive View and Visualization	tion		
• 187	Telemetry System Upgrade			
380	RTCA Support			
• 105	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	ology Transfer (SBIR/STTR) Programs.		
Total 4304				
Project D987	Pag	Page 15 of 17 Pages Exhi	Exhibit R-2 (PF 0605712A)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	197
BUDGET ACTIVITY 6 - Managen	BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712A Support of Operational Testing		PROJECT D987
2				100
FY 1998 Planned Program:	d Program:			
•	276 Video Telemetry and Recording System			
4	400 Multimedia Data Transfer System			
• 10	1070 AI/EWTS First Generation Upgrade			
•	176 High-Speed Telemetry System			
•	300 Radio Frequency Monitoring System			
•	765 Telemetry System Upgrade			
•	450 Command Audio / Visual Upgrade			
•	100 Pairing Through Obscuration			
•	350 Laser System Upgrade			
	500 Image System Upgrade			
•	100 Command, Control, Communications / FSATS			
•	41 Instrumented Personnel Parachutes			
	200 Secure Wide-Band Satellite Common Link			
•	172 Airborne Position Location System			
	325 Mobile TEXCOM Experimentation Center (MTEC)/MAIS Merger	Merger		
Total 52	5225			
FY 1999 Planned Program:	d Program:			
	578 Airborne Position Location System			
6				
•	100 C31 Interface/FSATS			
•				
-				
.3	325 Vehicle Performance Measuring System			
•	100 Radar Instrumentation Control System (Workshop Upgrade)			
-	798 High Speed Telemetry System			
•	400 MAIS Stand Alone Work Station			
•	180 TV FOW - Test and Evaluation with Fog of War			
• 211				
Total 5212	12			
Project D987	Page	Page 16 of 17 Pages	Exhibit R-2 (PE 0605712A)	

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RDT&E BUDGET ITEM JUSTI	FICATIO	IFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it)	DATE	February 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE	D TITLE	1 1000		PROJECT
		10000 IEM	io Hoddne	occar iza supportor operational resting	esting	1987
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 6002 6169	FY 1997 4396 4304	FY 1998 5223	FY 1992 5198		
Adjustments to Appropriated Value FY 1998 President's Budget Request	2471 8640	4304	5225	5212		

Change Summary Explanation: Funding: FY 1996 increase of (+2471) reprogrammed to fund critical instrumentation requirements for support of near term operational tests and war fighting exercises.

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Project D987

Exhibit R-2 (PE 0605712A)





RDT&E BUDGET ITEM JU	FEM JUS	TIFICA	ISTIFICATION SHEET (R-2 Exhibit)	HEET (R	8-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605801A Prog	ritle rogramv	PE NUMBER AND TITLE 0605801A Programwide Activities	vities			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	64859	59708	86208	85604	57794	60280	63680	65213	1	Continuing Continuing
M881 RDTE Command/Center/General	64859	56980	56964	55896	52593	53827	57095	58477	Continuing	Continuing
MM75 Federal Workforce Restructure	0	2728	29244	29708	5201	6453	6585	6736	Continuing	Continuing

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memorandum of understanding requirements (especially the American, British, Canadian and Australia mission). Includes research and development effort directed toward management and administrative functions at U.S. Army Research, Development and Standardization Groups overseas, Army Research, Development, Test, and Evaluation (RDTE) commands, centers and activities required to accomplish overall assigned general research and development missions and international research and development Standardization Groups play an integral role in the U.S. Army efforts for international cooperative research & development and interoperability and fulfills international not directly related to specific research and development projects. Project M881 reflects a glide path in response to Army infrastructure drawdown initiatives. The Mission Description and Budget Item Justification: This program funds the continued operation of non-Army Management Headquarters Activities (AMHA) support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

Page 1 of 5 Pages

Exhibit R-2 (PE 0605801A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	266
BUDGET ACTIVITY 6 - Management Support			PE N	PE NUMBER AND TITLE 0605801A Programwide Activities	тіт <u>г</u> rogramw	vide Activ	vities		a =	PROJECT M881
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M881 RDTE Command/Center/General	64859	56980	56964	55896	52593	53827	57095	58477	58477 Continuing Continuing	Continuing

Activity (USAMRAA) in support of the Army Medical Research and Materiel Command (USAMRMC) RDT&E programs and its tenant organizations at Ft. Detrick, MD, administrative functions at the following Army RDTE commands, centers and activities: U.S. Army Research Institute for the Behavioral and Social Sciences, Alexandria, Research Laboratory, Adelphi, MD; U.S. Army Missile RDE Center, Redstone Arsenal, AL; U.S. Army Tank-Automotive RDE Center, Warren, MI; U.S. Army Aviation perform long range planning, programming and budgeting; (3) provide the management of resources; and (4) conduct program performance review and evaluation for the VA; U.S. Army Armament Research, Development and Engineering (RDE) Center, Picatinny Arsenal, NJ; U.S. Army Aviation RDE Center, St. Louis, MO; U.S. Army beginning in FY 1997, funding for the headquarters activities at the USAMRMC, Ft. Detrick, Maryland, to (1) develop medical RDTE program policy and guidance; (2) including medical materiel procurement contracts for the U.S. Army Medical Materiel Agency and the Office of the Surgeon General, Army. The project also provides, A. Mission Description and Justification: Project M881 RDTE Command/Center/General Administrative Support: Supports the non-AMHA management and utilities, guards, and travel for five international RDTE Standardization Groups located in Australia, Canada, France, Germany, and United Kingdom. This project also Communications-Electronics Command RDE Center, Ft. Monmouth, NJ; U.S. Army Belvoir RDE Center, Ft. Belvoir, VA; U.S. Army Test and Evaluation Command, Aberdeen Proving Ground, MD; and provides funding for salaries, administrative support other than that provided by Department of State agreements to include rent, provides continued operations of contracting and acquisition management and related administrative functions performed by the Army Medical Research Acquisition and Troop Command R&D Integration Office, St. Louis, MO; U. S. Army Chemical Biological Defense Command, Aberdeen Proving Ground, MD; U.S. Army RDTE appropriation.

FY 1996 Accomplishments:

- 56725 Provided continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army non-AMHA RDTE commands, centers and activities.
 - Continued operation of five Standardization Groups in support of international R&D and rationalization, standardization and interoperability missions. Funded pay of people, travel and contracts for non-Department of Defense administrative support. 4095
 - Funded travel of the Army Science Board.
 - Continued to provide research, development, and acquisition management functions support of USAMRMC RDT&E programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts, and procurement of biological defense vaccines. Program resources from Program Element (PE) 0605898A, project MM03 moved into this PE. 292 3747

64859 Total

Project M881

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Exhibit R-2 (PE 0605801A)





	<u></u>	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 6 - Management Support	VITY Jemen	t Support	PE NUMBER AND TITLE 0605801A Programwide Activities	PROJECT M881
FY 1997 Planned Program: • 45668 Provide	nned Pr 45668	rogram: Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army	trative functions at a level consistent with mission requ	irements and support needs at Army
•	3960	Continue operation of five Standardization Groups in support of international R&D and rationalization, standardization and interoperability missions.	port of international R&D and rationalization, standard	ization and interoperability missions.
•	7201	Continue solutions, traver and contracts for non-Department of State authinistrative support. Continue to provide acquisition management functions in support of USAMRMC RDT&E programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts, and procurement of biological defense vaccines. Funds the operation of the USAMRMC HQ activities which administers the medical research, development, and acquisition program to sustain military technology superiority.	I state authinistrative support. support of USAMRMC RDT&E programs and its tena rocurement of biological defense vaccines. Funds the openent, and acquisition program to sustain military technoment.	int organizations, Ft. Detrick, MD, peration of the USAMRMC HQ
Fotal 5	151 56980	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	nology Transfer (SBIR/STTR) Programs.	
FY 1998 Planned Program:	nned Pr	ogram:		
•	45654	Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army non-AMHA RDTE commands, centers and activities.	trative functions at a level consistent with mission requi	irements and support needs at Army
•	3883	Continue operation of five Standardization Groups in support of international R&D and rationalization, standardization and interoperability missions.	port of international R&D and rationalization, standard	ization and interoperability missions.
•	7427	Continue to provide acquisition management functions in support of USAMRMC RDT&E programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts, and procurement of biological defense vaccines. Fund the operation of the USAMRMC HQ	support of USAMRMC RDT&E programs and its tena occurement of biological defense vaccines. Fund the opposite and socialistics program to sustain military forth.	nt organizations, Ft. Detrick, MD, eration of the USAMRMC HQ
Total 5	56964	acuvidos vines administeis ine inedical lescalei, develoj	ment, and acquistion program to sustain mintary teenr	totogy superiority.
FY 1999 Planned Program:	ned Pro	gram:		
•	44727	Provide continued operation of management and administrative functions at a level consistent with mission requirements and support needs at Army non-AMHA RDTE commands, centers and activities.	rative functions at a level consistent with mission requi	rements and support needs at Army
•	3806	Continue operation of five Standardization Groups in support of international R&D and rationalization, standardization and interoperability missions.	port of international R&D and rationalization, standardi	zation and interoperability missions.
•	7363	Continue to provide acquisition management functions in support of USAMRMC RDT&E programs and its tenant organizations, Ft. Detrick, MD, including medical materiel procurement contracts, and procurement of biological defense vaccines. Fund the operation of the USAMRMC HO	support of USAMRMC RDT&E programs and its tenal occurement of biological defense vaccines. Fund the op-	nt organizations, Ft. Detrick, MD, eration of the USAMRMC HO
Total 54	55896	activities which administers the medical research, development, and acquisition program to sustain military technology superiority.	ment, and acquisition program to sustain military techn	ology superiority.
Project M881			Page 3 of 5 Pages	Exhibit R-2 (PE 0605801A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATIO	N SHEET	(R-2 Exhib	it)	DATE February 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605801A Progr	ID TITLE Programwi	PE NUMBER AND TITLE 0605801A Programwide Activities	PROJECT NAS1
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 61913 63649	FY 1997 58305 56980	FY 1998 58988	FY 1999 57853	
FY 1998 President's Budget Request	64859	26980	56964	55896	
Project M881	Page	Page 4 of 5 Pages		Fyhi	Evhihit R.2 (DE 06058014)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605801A Prog	PE NUMBER AND TITLE 0605801A Programwide Activities	vide Activ	vities		.	PROJECT MM75
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
MM75 Federal Workforce Restructure	0	2728	29244	29708	5201	6453	6585		6736 Continuing Continuing	Continuing

A. Mission Description and Justification: Project MM75 Federal Workforce Restructure. Requirements were defined by the Federal Workforce Restructuring Act of 1994. Funds are to be used to offset the expenses of VERA/VSIP, the \$80 per capita tax to be remitted to the Treasury (Civil Service Retirement and Disability Fund) for on-board personnel as of 31 March and the 9% tax on the final basic pay of each employee who retired under VERA/VSIP to be remitted to the Civil Service Retirement and Disability Fund. Distribution will be made in the year of execution.

FY 1996 Accomplishments: Project not funded in FY 96.

FY 1997 Planned Program:

- 2661 Funds will be distributed to qualifying program elements.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

2728 Total

FY 1998 Planned Program:

29244 Funds will be distributed to qualifying program elements.

29244 Total

FY 1999 Planned Program:

29708 Funds will be distributed to qualifying program elements.

29708 Total

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	0	2787	29355	29766
Appropriated Value		2728		
Adjustments to Appropriated Value				
FY 1998 President's Budget Request	0	2728	29244	29708

Project MM75

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Exhibit R-2 (PE 0605801A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	2-2 Exhi	bit)		DATE	4	4007
BUDGET ACTIVITY 6 - Management Support	nt Support			PE N 060	PE NUMBER AND TITLE 0605802A Inter Development	PENIUA DENUMBER AND TITLE 0605802A International Cooperative Research and Development	nal Coop	erative F	Research		PROJECT
0	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M798 International Control Development-A	International Cooperative Research and Development-Army Research Institute	1555	1534	1581	1581	1559	1542	1571	1604	Continuing	Continuing
A. Mission Description and research and development (Requipment, etc.) required to cooperative R&D initiatives the NATO Industrial Adviso [SNR(A)], the American, Brworking groups with many n funded in Budget Activity 6.	A. Mission Description and Budget Item Justification: The goal of this program is to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing. This program partially funds the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in international fora, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program also includes: the United States' share of costs of the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning; partially funds the Four Power Senior National Representatives Army [SNR(A)], the American, British, Canadian, Australian (ABCA) Standardization Program, the Technical Cooperative Program, bilateral staff talks, and Army armaments working groups with many nations. This project supports general research and development activities and since it is not allocable to specific R&D missions is appropriately funded in Budget Activity 6.	ation: The haring. This I had fora, such stative agreen he Special Fu ian (ABCA) ports general	goal of this rogram par nas the Nort nents such a ind for Coop Standardizal research an	program is trially funds the Atlantic Tes memorand perative Plantion Programid development	o expand wo the travel cos reaty Organi la of underst ming; partial η, the Techni ent activities	The goal of this program is to expand worldwide allied standardization and interoperability through cooperative. It is program partially funds the travel costs and administrative support (studies, analysis, interpretation, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), and to pursue new greements such as memoranda of understanding. This program also includes: the United States' share of costs o ial Fund for Cooperative Planning; partially funds the Four Power Senior National Representatives Army CA) Standardization Program, the Technical Cooperative Program, bilateral staff talks, and Army armaments anexal research and development activities and since it is not allocable to specific R&D missions is appropriately	d standardizi nistrative sur O) Army Ar program als Four Power tive Program is not alloca	ation and int oport (studie maments Gi o includes: Senior Natio ble to specif	eroperability ss, analysis, roup (NAAC the United S onal Represe aff talks, and ic R&D mis	y through co interpretatic 3), and to pu states' share entatives Arr d Army arm	operative m, irsue new of costs of my aments
FY 1996 Accomplishments:	hments: Funded domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies. Funded the United States' share of the NIAG and Special Fund for cooperative planning budget.	ional travel li re of the NIA	nked to scie G and Spec	ntific and te	chnological cooperative	exchanges ha	aving militar dget.	y applicatio	n and mutua	I benefits to	the
FY 1997 Planned Program:	rogram: Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies. Fund the United States' share of the NIAG and Special Fund for cooperative planning budget. Small Business Innovation/Small Business Technology Transfer (SBIR/STTR) Programs.	nal travel link of the NIAG nall Business	ed to scienti and Special Technology	d to scientific and technological exchanges hand Special Fund for cooperative planning bucechnology Transfer (SBIR/STTR) Programs.	nological ex operative plk BIR/STTR)	ted to scientific and technological exchanges having and Special Fund for cooperative planning budget. Technology Transfer (SBIR/STTR) Programs.	ing military a	pplication a	nd mutual b	enefits to th	e United
FY 1998 Planned Program:	rogram: Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies. Fund the United States' share of the NIAG and Special Fund for cooperative planning budget.	al travel link of the NIAG	ed to scienti and Special	fic and techr Fund for co	nological exc operative pla	changes havi	ng military a et.	pplication a	nd mutual b	enefits to th	e United
Project M798				Page I of 2 Pages	? Pages			Exhibit	Exhibit R-2 (PE 0605802A)	305802A)	

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אטופה מטטפהו	ITEM JUSTIF	FICATIC	HS NC	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	1997
вир дет Астиит У 6 - Management Support			PE NUM 0605 Deve	PE NUMBER AND TITLE 0605802A International Cooperative Research and Development	ive Research and	PROJECT M798
 FY 1999 Planned Program: 731 Fund domestic and international travel linked to scientific and technological exchanges having States and its Allies. 850 Fund the United States' share of the NIAG and Special Fund for cooperative planning budget. Total	tional travel linked to are of the NIAG and	o scientific Special Fu	and technond for cool	ogram: Fund domestic and international travel linked to scientific and technological exchanges having military application and mutual benefits to the United States and its Allies. Fund the United States' share of the NIAG and Special Fund for cooperative planning budget.	ation and mutual benefits to	o the United
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 FY 1561 1561 -6 1555	EY 1997 E 1566 1534 1534	FY 1998 1559 1581	FY 1999 1551 1581		
Project M798		Pa	Page 2 of 2 Pages 1202		Exhibit R-2 (PE 0605802A)) Item 124

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E- Management and Support FF Number And Title Feature Resimant and Support FF Number And Title Feature Resimant and Support FF 1996 FF 1996 FF 1996 FF 1996 FF 2000		RDT&E BUDGET ITEM JUST	EM JUS		TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	oit)		DATE FeI	February 1997	26(
Total Program Element (PE) Cost FY 1996 Actual FY 1996 Estimate FY 1996 Estimate FY 1996 Estimate FY 1996 Estimate FY 2000 Estimate FY 2001 Estimate FY 2002 Estimate FY 2002 Estimate FY 2003 Estimate FY 2004 Estimate FY 2	BUDGET ACTIVITY 6 - Managem	nent and Support			PE NI 060	MBER AND 15803A T	ritle echnical	Informat	tion Activ	/ities		
Total Program Element (PE) Cost 13549 16552 15451 15872 16097 16551 16672 16965 Continuing Field Assistance in Science and Technology 2343 2739 2887 3015 3135 3265 3332 3404 Continuing Board on Army Science and Technology 651 675 734 756 756 756 789 787 Continuing Technical Information Functional Activities 2683 2865 3152 3222 3221 3301 3369 3443 Continuing Technical Information Activities 2683 2865 3060 3187 3315 3520 3583 3672 Continuing Youth Science Activities 1985 2261 2372 2431 2470 2525 2573 2673 Continuing Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td></td> <td>COST (in Thousands)</td> <td>FY 1996 Actual</td> <td>FY 1997 Estimate</td> <td>FY 1998 Estimate</td> <td>FY 1999 Estimate</td> <td>FY 2000 Estimate</td> <td>FY 2001 Estimate</td> <td>FY 2002 Estimate</td> <td>FY 2003 Estimate</td> <td>Cost to Complete</td> <td>Total Cost</td>		COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Field Assistance in Science and Technology 2343 2739 2887 3015 3135 3265 3352 3404 Continuing Board on Army Science and Technology 651 675 734 778 756 769 783 779 Continuing Technical Information Activities 2683 2805 3162 3221 3315 3520 3583 3443 Continuing Technical Information Activities 2683 2805 3060 3187 3315 3520 3520 3593 3443 Continuing Youth Science Activities 1985 2261 2372 2431 2470 2525 2572 2672 Continuing Personnel and Training Analysis Activities 3381 3376 1025 1033 1015 1011 1008 1006 Continuing Advisory Group on Electronic Devices 3600 2134 2221 2226 2186 2186 2160 2011 Continuing	Total Progra	am Element (PE) Cost	13549	16552	15451	15872	16097	16551	16672	16965	Continuing	Continuing
Board on Army Science and Technology 651 675 734 758 755 759 783 787 Continuing Technical Information Functional Activities 2456 2562 3167 3221 3221 3361 3692 3443 Continuing Technical Information Activities 2683 2261 2261 2372 2431 2470 2525 3593 3672 Continuing Youth Science Activities 3381 3376 1025 1033 1015 1011 1008 1005 Continuing Government/Industry Data Exchange Program/ Glaber/AGED) 50 0		ance in Science and Technology	2343	2739	2887	3015	3135	3265	3332	3404	Continuing	Continuing
Technical Information Functional Activities 2456 2562 3152 3221 3301 3369 3443 Continuing Technical Information Activities 2683 2805 3060 3187 3315 3520 3529 3529 3672 Continuing Youth Science Activities 1986 2261 2372 2431 2470 2525 2572 2633 Continuing Personnel and Training Analysis Activities 3381 3376 1025 1033 1016 1011 1008 1006 Continuing Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices 50 0 </td <td>DC18 Board on Ar</td> <td>rmy Science and Technology</td> <td>651</td> <td>675</td> <td>734</td> <td>758</td> <td>755</td> <td>769</td> <td>783</td> <td>797</td> <td>Continuing</td> <td>Continuing</td>	DC18 Board on Ar	rmy Science and Technology	651	675	734	758	755	769	783	797	Continuing	Continuing
Technical Information Activities 2683 2805 3060 3187 3315 3520 3520 3593 3672 Continuing Youth Science Activities 1985 2261 2261 2372 2431 2470 2525 2572 2633 Continuing Personnel and Training Analysis Activities 3381 3376 1025 1033 1015 1011 1008 1005 Continuing Government/Industry Data Exchange Program/ Global Activities 50 0	M720 Technical In	nformation Functional Activities	2456	2562	3152	3222	3221	3301	3369	3443	Continuing	Continuing
Youth Science Activities 1985 2261 2372 2431 2470 2525 2572 2633 Continuing Personnel and Training Analysis Activities 3381 3376 1025 1033 1015 1011 1008 1005 Continuing Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices (GIDEP/AGED) 50 0		nformation Activities	2683	2805	3060	3187	3315	3520	3593	3672	Continuing	Continuing
Personnel and Training Analysis Activities 3381 3376 1025 1025 1033 1015 1015 1011 1008 1005 Continuing Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices (GIDEP/AGED) 50 0	M729 Youth Scien	nce Activities	1985	2261	2372	2431	2470	2525	2572	2633	Continuing	Continuing
Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices (GIDEP/AGED) Advisory Group on Electronic Devices (GIDEP/AGED) Acquisition Technology Act 0 2134 2221 2226 2186 2160 2015 2011 Continuing		and Training Analysis Activities	3381	3376	1025	1033	1015	1011	1008	1005	Continuing	Continuing
Acquisition Technology Act 0 2134 2221 2226 2186 2160 2015 2011 Continuing		f/Industry Data Exchange Program/ roup on Electronic Devices IED)	50	0	0	0	0	0	0	0	0	428
	M733 Acquisition	Technology Act	0	2134	2221	2226	2186	2160	2015	2011	Continuing	Continuing

technical problems. Coordination of this program with other Services is achieved through interservice working groups. The work in this program element is consistent with Laboratory, the Army Materiel Command, the Army Research Office, the Army Research Institute, the Army Corps of Engineers and the Information Management Office. issues. This program also provides for science advisors to Commanders-in-Chief (CINCs) and major Army commands and engineering teams to directly solve field Army and management information at all levels of Army Research and Development (R&D). This includes initiatives to improve information derivation, storage, access, display, using behavioral science-based analytic tools, to provide policy and decision makers with soldier oriented recommendations concerning manpower, personnel and training Mission Description and Budget Item Justification: This program provides for upgrading the accuracy, timeliness, availability, and accessibility of scientific, technical, validation, transmission, distribution, and interpretation. This program addresses the need to increase the competitiveness and availability of scientific, engineering, and Army laboratories, thereby exposing these students to the working world of science and engineering. Funding under this program provides for the conduct of analyses, technical skills in the DoD and National workforce. It accomplishes this through outreach programs that provide direct working experience for high school students in rigorous peer review and the Army Science and Technology Master Plan (ASTMP). These programs are accomplished under the management of the Army Research The projects in this Program Element include management support of Science and Technology efforts and therefore are correctly placed in Budget Activity 6.

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Exhibit R-2 (PE 0605803A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support			PE N	PE NUMBER AND TITLE 0605803A Tech	PENUMBER AND TITLE 0605803A Technical Information Activities	Informa	tion Activ			PROJECT DC16
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC16 Field Assistance in Science and Technology	2343	2739	2887	3015	3135	3265	3332	3404	Continuing	3404 Continuing Continuing

affecting improved readiness, safety, training, and operations and support (O&S) cost reductions. The Commanding General, AMC, institutionalized AMC Field Assistance A. Mission Description and Justification: This program focuses Army Materiel Command (AMC) resources to rapidly identify and solve field Army technical problems engineering center. All costs associated with science advisor assignments are funded by AMC subordinate commands who supply the science advisers for two to three year in Science and Technology (FAST) in 1988 to plan for and allocate all AMC FAST program funding for projects to support CINCs and commanders and to operate the director's office. FAST tours provide major professional growth for scientists and engineers. Science advisers are recruited from AMC engineering centers to serve Commanders-in-Chief (CINCs) and major Army commanders world-wide and are supported by assigned Quick Reaction Coordinators (QRCs) within each AMC tours. FAST manages a level of effort type project with most projects recouping many times their cost in O&S cost savings.

FY 1996 Accomplishments:

- Provided continuous activity on over 265 FAST projects. Defined, tested and recommended technological solutions to materiel problems identified by CINCs worldwide and prepared operational needs statements and test results for the highest priority programs.
 - Provided professional growth opportunity for 20 science advisers on two year and three year tours and 30 FAST-junior scientists and engineers on two to eight week tours.
 - Provided professional growth opportunity for 55 personnel in the Science and Engineers Field Experience with Soldiers (SEFEWS) program. Total

FY 1997 Planned Program:

- Provide continuous activity on over 280 FAST projects. Define, test and recommend technological solutions to materiel problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs.
- Provide professional growth opportunity for 20 science advisers on two year and three year tours and 40 FAST-junior scientists and engineers on two to eight week tours.
 - Provide professional growth opportunity for 70 personnel in the SEFEWS program.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

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FY 1998 Planned Program: • Total 2887 - Provide continuous activity on over 280 FAST projects. Define, test and recommend technological solutions to material problems identified by CINCs worldwide and prepare operational needs statements and test results for the highest priority programs. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS programs. - Provide professional growth opportunity for 70 personnel in the SEFEWS programs. - Provide professional growth opportunity for 70 personnel in the SEFEWS programs. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provide professional growth opportunity for 70 personnel in the SEFEWS program. - Provid		RD	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit)	DATE	February 1997
	BUDGET ACTI 6 - Manaç	итү Jement a	ind Support	PE NUMI 06058	SER AND TITLE	E hnical Infe		PROJECT DC16
	FY 1998 Pla	nned Progr 2887 - P C C	am: rovide continuous activity on over 280 FAST projects. INCs worldwide and prepare operational needs statem rovide professional growth opportunity for 20 science	. Define, test tents and test advisers on	and recomme results for the wo year and t	and technolog highest prior hree year tou	ical solutions to materiel problems rity programs. rs and 40 FAST-junior scientists a	s identified by
N E S S	Total		vo to eight week touts. rovide professional growth opportunity for 70 personn	nel in the SEF	'EWS progran	j.		
S H S e	FY 1999 Pla	nned Progr 3015 - P C	am: rovide continuous activity on over 280 FAST projects. INCs worldwide and prepare operational needs statem rovide professional growth opportunity for 20 science.	. Define, test ents and test advisers on t	and recomme results for the wo vear and t	and technolog highest prion	ical solutions to materiel problems rity programs.	s identified by
Summary FV 1996 FV 1997 FY 1998 FY Budget 2703 2798 2871 ropriated Value -435 2739 2887 tequest 2343 2739 2887	Total		vo to eight week tours. rovide professional growth opportunity for 70 personn	el in the SEF	EWS prograr	n.		
2778 2739 ropriated Value -435 -2739 2887	B. Project C FY 1997 Pres	Change Sum sident's Bud	λ.i.	FY 1996 2703	FY 1997 2798	FY 1998 2871	FY 1999 2990	
	Appropriated Adjustments FY 1998 Pres	I Value to Appropri s Bud Reque	ated Value	2778 -435 2343	2739	2887	3015	

Project DC16

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Exhibit R-2 (PE 0605803A)

1205





	RDT&E BUDGET ITEM JUS		TIFICA	FION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	26
BUDGET ACTIVITY 6 - Managen	BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605803A Tech	TITLE echnical	Informa	PE NUMBER AND TITLE 0605803A Technical Information Activities	vities		PROJECT DC18
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC18 Board	Board on Army Science and Technology	651	675	734	758	755	769	783	797	Continuing	Continuing
A. Mission Commission related studie conclusions,	A. Mission Description and Justification: The Board on Army Science and Technology (BAST) was created in 1982 by the National Research Council (NRC) through its Commission on Engineering and Technology Systems at the request of the Under Secretary of the Army. The BAST designs, conducts, and supervises the NRC's Army-related studies of scientific and technological issues. As such, the BAST defines problems, brings together leading experts to study them, and most importantly, draws conclusions, identifies alternatives and implications, and makes recommendations as appropriate. The major activities of this group include board meetings, special requests, standing committees, study committees and workshops and seminars.	ard on Army as at the requ As such, the and makes re	Science and est of the Ui BAST define commendations.	I Technolog ider Secreta nes problem ions as appr	y (BAST) w ry of the Arr s, brings tog opriate. The	as created in ny. The BA ether leading major activ	ST designs, sexperts to sities of this g	e National Re conducts, an study them, a group includ	search Cour id supervises and most im e board meer	Science and Technology (BAST) was created in 1982 by the National Research Council (NRC) through its est of the Under Secretary of the Army. The BAST designs, conducts, and supervises the NRC's Army-BAST defines problems, brings together leading experts to study them, and most importantly, draws commendations as appropriate. The major activities of this group include board meetings, special requests, ars.	hrough its Army- aws I requests,
FY 1996 Ac	FY 1996 Accomplishments:	pport for fore	cast of Arm	y science an	d technolog	y needs and	responded tc	o immediate	science and	technology	
	- Provided experts to participate in peer reviews for annual Independent Laboratory In-house Research (ILIR) and Research and Development Achievement (RDA) awards review. - Concluded study addressing research status of space-based communications technology for Command, Control, Communications and Intelligence	te in peer rev review. research stat	iews for and is of space-l	nual Indepen based comm	dent Labora unications te	tory In-hous echnology fo	e Research (r Command	(ILIR) and R., Control, Co	esearch and	Developmer	nt igence
Total	(C3I) to "win the information war".	n war".)
FY 1997 Pla	FY 1997 Planned Program: 658 - Provide technical expert support for forecast of Army science and technology needs and respond to immediate science and technology requirements.	port for forec	ast of Army	science and	technology	needs and re	spond to im	mediate scie	nce and tech	mology	
Total	- Provide experts to participate in peer reviews for annual ILIR and RDA awards review Initiate BAST study on "Compact Power". 17 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	in peer revie npact Power" esearch/Sma	ews for annu Il Business]	al ILIR and echnology	RDA award Fransfer (SB	ls review. IIR/STTR) P	rograms.				
FY 1998 Pla	FY 1998 Planned Program:	و						;			

- Provide technical expert support for forecast of Army science and technology needs and respond to immediate science and technology 734

requirements.
- Provide experts to participate in peer reviews for annual ILIR and RDA awards review.
- Complete BAST study on "Compact Power".

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Project DC18

Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FIFICATION SHEET (R	R-2 Exhibit)	DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605803A Tech	тіт <u>ге</u> Гесhnical Info	PE NUMBER AND TITLE 0605803A Technical Information Activities	PROJECT DC18
 FY 1999 Planned Program: 758 - Provide technical expert support for forecast of Army science and technology needs and respond to immediate science and technology requirements. Provide experts to participate in peer reviews for annual ILJR and RDA awards review. Total 758 	ast of Army science and technology ws for annual ILJR and RDA award	y needs and respondes review.	d to immediate science and techn	nology
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 668 690 687 675 -36	77 FY 1998 10 707	FY 1999 724	
FY 1998 Pres Bud Request	651 675	5 734	758	
Project DC18	Page 5 of 17 Pages		Exhibit R-2 (PE 0605803A)	05803A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605803A Technical Information Activities	пть echnical	Informa	tion Activ	/ities	a 2	PROJECT M720
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M720 Technical Information Functional Activities	2456	2562	3152	3222	3221	3301	3369	3443	Continuing Continuing	Continuing

database; Army support for the Federated Laboratory Consortium (FLC); the Army Science Board; administration of the Army's Small Business Innovative Research (SBIR) both the public and private sectors to reduce duplication in R&D programs and to increase competitiveness in the U.S. business community. In addition this project provides funding for patent fees and patent legal expenses for all U. S. Army Materiel Command (AMC) subordinate commands and laboratories. The requirement to fund this effort costs are funded here because the Act prohibits use of PE 0605502 for funding administrative costs, studies and analyses to support the Acquisition Corps acquisition and retention of scientists and engineers and improvement of productivity of laboratories and centers. Technology transfer activities make technical information available to A. Mission Description and Justification: Technology transfer activities to support acquisition, storage, and utilization of technical information for both military and and Small Business Technology Transfer Pilot Program (STTR) in accordance with the "Small Business Research and Development Enhancement Act of 1992". These domestic applications. Activities supported are: Army participation in the Defense Technical Information Center (DTIC) Work Unit Information Summary (WUIS) is a result of the Omnibus Budget Reconciliation Act requiring the U. S. Patent and Trademark Office to become a completely user-fee funded agency.

FY 1996 Accomplishments:

- Continued managerial, programming, database, clerical and personnel support to process, store, control and report the WUIS, 1498's.
 - Provided the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report.
 - Provided Army funding support for FLC as required by Public Law 99-502.
- Provided administrative and contractual support for the Army Science Board.
 - 1404 Provided Army Science and Technology Summer Study and awards.
 - Provided administrative support for SBIR/STTR programs.
- Provided funding for patent fees and patent legal expenses for AMC commands and laboratories.
 - Total 2456

FY 1997 Planned Program:

- Continue managerial, programming, database, clerical and personnel support to process, store, control and report the WUIS, 1498's. 995
 - Provide the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report.
 - Provide Army funding support for FLC as required by Public Law 99-502.
- Provide administrative and contractual support for the ASB.
 - 1504 Provide administrative support for SBIR/STTR programs.
- Provide Army Science and Technology Reports.
- Provide funding for patent fees and patent legal expenses for AMC commands and laboratories.

Project M720

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Exhibit R-2 (PE 0605803A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	R-2 Exhibit) PATE February 1997	1997
BUDGET ACTIVITY 6 - Manageme	DE NUMBER AND TITLE - Management and Support 0605803A Tech	nical Information Activities	PROJECT M720
FY 1997 Planned 63 Total 2562	 FY 1997 Planned Program: (continued) Provide funding for Army Science and Technology Summer Study and awards. Provide funding for support of Government/Industry Data Exchange Program (GIDEP). 63 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Total	rds. m (GIDEP). SBIR/STTR) Programs.	
FY 1998 Planned Program: 1052 - Contin - Provic - Provic - Provic - Provic - Provic - Provic	 Program: Continue managerial, programming, database, clerical and personnel support to process, store, control and report the WUIS, 1498's. Provide the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report. Provide Army funding support for FLC as required by Public Law 99-502. Provide administrative and contractual support for the ASB. Provide administrative support for SBIR/STTR programs. Provide Army Science and Technology Reports. 	t to process, store, control and report the WUIS, 1498's. DoD Tri-Service In-House RDT&E Facilities Report.	
Total 3152	 Provide funding for patent fees and patent legal expenses for AMC commands and laboratories. Provide funding for Army Science and Technology Summer Study and awards. Provide funding for support of GIDEP. 	ds and laboratories. rds.	
FY 1999 Planned Program: 1088 - Conting Provide - Provi	 rogram: Continue managerial, programming, database, clerical and personnel support to process, store, control and report the WUIS, 1498's. Provide the Army funding for the annual data collection and printing of the DoD Tri-Service In-House RDT&E Facilities Report. Provide Army funding support for FLC as required by Public Law 99-502. Provide administrative and contractual support for the ASB. Provide administrative support for SBIR/STTR programs. Provide Army Science and Technology Reports. 	t to process, store, control and report the WUIS, 1498's. DoD Tri-Service In-House RDT&E Facilities Report.	
Total 3222	 Provide funding for patent fees and patent legal expenses for AMC commands and laboratories. Provide funding for Army Science and Technology Summer Study and awards. Provide funding for support of GIDEP. 	ds and laboratories. ds.	
Project M720	Page 7 of 17 Pages	Exhibit R-2 (PE 0605803A)	
	1209		Item 125



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION SH	IEET (R-2	Exhibit)		Febru	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUN	PE NUMBER AND TITLE 0605803A Technical Information Activities	E hnical Info	rmation Ac		PROJECT M720
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 2277	FY 1997 2626 2563	FY 1998 2727	FY 1999 2779		
Adjustments to Appropriated Value FY 1998 Pres Bud Request	+115	2562	3152	3222		
Change Summary Explanation: Funding: FY 98 and FY 99 - Funding increase of (+425) and (+443) respectively required to improve the provision of Technical Information Functional Activities.	ding increase of (+425) a Activities.	ınd (+443) resp	ectively require	ed to improve t	he provision of Te	echnical

Project M720

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Exhibit R-2 (PE 0605803A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	16
BUDGET ACTIVITY 6 - Management and Support			PE NI 000	PE NUMBER AND TITLE 0605803A Tech	E NUMBER AND TITLE D605803A Technical Information Activities	Informa	tion Activ		4 2	PROJECT M727
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M727 Technical Information Activities	2683	2805	3060	3187	3315	3520	3593	3672	3672 Continuing Continuing	Continuing

A. Mission Description and Justification: This project supports development of decision aids, databases, and automation support for the management and execution of the set of management decision aids, databases, and hardware/software tools to support technical and budgetary decisions at the Office, Secretary of Defense (OSD), Department Army Research, Development, Test and Evaluation (RDTE) Appropriation. It includes the hardware, software and contractor support required to develop and implement a of the Army (DA), Corps of Engineers and Army Materiel Command (AMC) levels. This project includes support of the Acquisition Management Integration Subgroup (AMIS) dealing with acquisition management systems.

FY 1996 Accomplishments:

- Continued the Science and Technology (S&T) database computer engineering support contract.
 - Continued support to Army S&T strategic planning, analysis, and prioritization
 - Continued support to AMC database and Defense Reliance management.
- Provided guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for

2683 Total

FY 1997 Planned Program:

- Continue the S&T database computer engineering support contract.
- Continue support to Army S&T strategic planning, analysis, and prioritization.
 - Continue support to AMC database and Defense Reliance management.
- Provide guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

2805 Total

FY 1998 Planned Program:

- Continue the S&T database computer engineering support contract.
- Continue support to Army S&T strategic planning, analysis, and prioritization.
 - Continue support to AMC database and Defense Reliance management.
- Provide guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS.

3060 Total

Project M727

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Exhibit R-2 (PE 0605803A)







RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET	(R-2 Ex	hibit)	DATE Febr	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605803A Tech	ND TITLE A Technic	al Inform	ਮπ∟E Technical Information Activities	PROJECT M727
FY 1999 Planned Program: - 3187 - Continue the S&T database computer engineering support contract. - Continue support to Army S&T strategic planning, analysis, and prioritization. - Continue support to AMC database and Defense Reliance management. - Provide guidance and policy relative to the content, utilization, and requirements of current and future acquisition management systems for AMIS. Total 3187	t contract. ils, and prioritiza management. ation, and requir	ıtion. ements of cu	rrent and futur	e acquisition management s	systems for AMIS.
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	EY 1996 2615 2731 -48	FY 1997 2870 2805	FY 1998 3046	FY 1999 3166	
FY 1998 Pres Bud Request		2805	3060	3187	
Project M727	Page 10 of 17 Pages			Exhibit R-2 (PE 0605803A)	05803A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 000	PE NUMBER AND TITLE 0605803A Tech	E NUMBER AND TITLE 3605803A Technical Information Activities	Informat	tion Activ	/ities	a e	PROJECT M729
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M729 Youth Science Activities	1985	2261	2372	2431	2470	2525	2572	2633	2633 Continuing Continuing	Continuing

needs. No other program fulfills this long-range Army goal. The joint Army/Navy Washington regional area Science and Engineering Apprenticeship Program (SEAP) has science, engineering, and mathematics. These activities are consolidated within this program to "present the Army" to a potential pool of technical talent to fill future Army laboratories in hopes of encouraging more of them to enter scientific fields of study in the future. This program enhances the National Laboratory Science and Engineering been included in the overall effort. This provides an eight week hands-on learning experience for high school students working with bench level scientists within Army A. Mission Description and Justification: Supports science activities to encourage over 100,000 high school youths to develop interest and achieve higher levels in pool which in turn supports Defense industry and laboratory needs.

FY 1996 Accomplishments:

- 1985 - Continued to foster high school student interest in science, mathematics, engineering and computer science, nationally, by sponsoring: the Junior Science Humanities Symposium (JSHS), International Mathematics Olympiad (IMO), and Research and Engineering Apprenticeship Program (REAP)
- Continued the Joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/Research Development and Engineering (RDE) Center sponsorship of students.
 - Continued special tutorial programs for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level.

1985 Total

FY 1997 Planned Program:

- Continue to foster high school student interest in science, mathematics, engineering and computer science, nationally, by sponsoring: JSHS, IMO, and REAP.
- Continue the Joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/RDE Center sponsorship of students.
- · Continue special tutorial programs for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level.

 Continue the West Point cadet research internship program to enhance cadet training through field experience within Army research laboratories
 - and centers.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

2261 Total

Project M729

1213

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Exhibit R-2 (PE 0605803A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHE	EET (R-2	Exhibit)	DATE February 1997	997
BUDGET ACTIVITY 6 - Manageme	DGET ACTIVITY - Management and Support	PE NUM 0605	PE NUMBER AND TITLE 0605803A Tech	E hnical Info	PE NUMBER AND TITLE 0605803A Technical Information Activities	PROJECT M729
FY 1998 Planned Program: 2372 - Conting - Conting of attention of att	 rogram: Continue to foster high school student interest in science, mathematics, engineering and computer science, nationally, by sponsoring: JSHS, IMO, and REAP. Continue the Joint Army/Navy Washington Regional Area SEAP and increase Army Laboratory/RDE Center sponsorship of students. Continue special tutorial programs for Native Americans, African Americans, and Spanish-speaking Americans designed to increase their chances of attending and completing engineering and/or science curriculum at the university level. Continue the West Point cadet research internship program to enhance cadet training through field experience within Army research laboratories and centers. 	nce, mathemat Area SEAP ar ans, African A ce curriculum ogram to enhan	ics, engineerind increase Armericans, and at the universice cadet train	ng and comput my Laborator. I Spanish-spea ity level. ing through fie	er science, nationally, by sponsoring: JSH y/RDE Center sponsorship of students. king Americans designed to increase their sld experience within Army research labor	S, IMO, chances atories
99 Plan	nue to foster high school student inte EAP. nue the Joint Army/Navy Washingto nue special tutorial programs for Nat ending and completing engineering a nue the West Point cadet research intenters.	nce, mathemati Area SEAP an ans, African A ce curriculum ogram to enhan	ics, engineerind increase Aramericans, and at the universice ce cadet traini	ng and comput my Laboratory Spanish-speal ity level. ing through fie	rest in science, mathematics, engineering and computer science, nationally, by sponsoring: JSHS, IMC n Regional Area SEAP and increase Army Laboratory/RDE Center sponsorship of students. ive Americans, African Americans, and Spanish-speaking Americans designed to increase their chance and/or science curriculum at the university level. rernship program to enhance cadet training through field experience within Army research laboratories	S, IMO, chances atories
Total 2431						
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	Summary Budget ropriated Value	FY 1996 1924 1977 8	FY 1997 2309 2261	FY 1998 2368	<u>FY 1999</u> 2425	
FY 1998 Pres Bud Request	tequest	1985	2261	2372	2431	
Project M729	The second secon	Page 12 of 17 Pages	Pages		Exhibit R-2 (PE 0605803A)	

RDT&E BUDGET ITEM JUST	TEM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605803A Tech	PE NUMBER AND TITLE 0605803A Technical Information Activities	Informa	tion Activ	vities	. U	PROJECT D730
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D730 Personnel and Training Analysis Activities	3381	3376	1025	1033	1015	1011	1008	1005	1005 Continuing Continuing	Continuing

alternative force structures and the effects of a smaller Army on retention and readiness of quality soldiers. Requirements for studies and analyses for critical personnel and A. Mission Description and Justification: This project provides for the application of behavioral science-based analytical technologies by the U.S. Army Research performance, and provides the Army a unique capability for addressing such issues as the effects of training on individual and unit readiness, the personnel costs of Institute for the Behavioral and Social Sciences (ARI) to current and near-term soldier-related issues. The program is focused on policy issues to enhance soldier training issues of immediate importance are solicited on an annual basis.

FY 1996 Accomplishments:

- Determined effects of alternative compensation and personnel policies upon enlistment, attrition, retention, and separation decisions and costs in an era of downsizing.
 - Determined skills and task training requirements for effective back-up operations to digitization when systems are degraded, disrupted or compromised.
 - Determined training, career and professional concerns of active duty Special Forces NCOs.
- Determined impact of reductions in training resources on the quality of TRADOC graduates' performance.

3381 Total

FY 1997 Planned Program:

- Develop alternative design specifications to improve forecasting accuracy of Army strength management models.
 - Identify capabilities and actions that can be automated to reduce personnel costs associated with exercise
 - control and feedback functions in a live training environment.
- Analyze impact on training and readiness resources with the consolidation of specified maintenance and combat engineering jobs.
 - Analyze training requirements to enhance skill proficiency for backup operations on the digitized battlefield.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total

FY 1998 Planned Program:

- Analyze training issues associated with specific training devices and systems identified by TRADOC.

Total

Project D730

1215

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RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605803A Tech	D TITLE Technica	Informatic	PE NUMBER AND TITLE 0605803A Technical Information Activities	PROJECT D730
FY 1999 Planned Program: • 1033 - Continue analyses of training issues associated with training devices and systems. Total 1033	training devices and sy	stems.			
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 2955 3448 3038 3376 3376	FY	FY	<u>1999</u> 3622 1033	
Change Summary Explanation: Funding: FY 1996- Funding increase (+343) reprogrammed for increased study efforts in training requirements for the digitized battlefield. FY 1998- Funding reprogrammed (-2510) to higher priority requirements. FY 1999- Funding reprogrammed (-2589) to higher priority requirements.	reprogrammed for inc (-2510) to higher priori (-2589) to higher priori	reased study e ty requiremen ty requiremen	fforts in training ts.	g requirements for the digitize	Q
Project D730	Page 14 of 17 Pages			Exhibit R-2 (PE 0605803A)	(t

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SE	HEET (R	t-2 Exhi	bit)		DATE FeI	February 1997	160
BUDGET ACTIVITY 6 - Management and Support			DE NO	PE NUMBER AND TITLE 0605803A Tech	ттге echnical	PE NUMBER AND TITLE 0605803A Technical Information Activities	tion Acti	vities	d. =	PROJECT M731
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M731 Government/Industry Data Exchange Program/ Advisory Group on Electronic Devices (GIDEP/AGED)	50	0	0	0	0	0	0	0	0	428

vehicle for documenting commercially unavailable military vital design information. The EDHP benefits the Army by preserving vital design information, providing a focal technical design information not commercially available. The Engineering Design Handbook/Information Program (EDHP) was established in 1954 to provide an effective point for Army and/or Tri-Service coordination of critical design issues, eliminating redundant acquisition actions, providing customized contracting services, and assuring logistics and cost of defense weapon systems equipment. Funds support GIDEP reliability, maintainability and failure experiences interchange databases. Documents A. Mission Description and Justification: The GIDEP is a joint government/industry effort for the exchange of data to enhance development, design, engineering Army standardization.

FY 1996 Accomplishments:

Completed the information exchange of data between industry and government in the Complete Engineering Design Handbooks: Fuse Shock and Vibration Design Handbook, Vol. I; Rotorcraft and Light Aircraft Qualification; Documentation of Electronic Systems; Design for Projection; Rotorcraft and Light Aircraft Qualification 50 Total

FY 1997 Planned Program: Project not funded in FY 97.

FY 1998 Planned Program: Project not funded in FY 98.

FY 1999 Planned Program: Project not funded in FY 99.

-	B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 19
	FY 1997 President's Budget	278	0	0	
	Appropriated Value	285			
	Adjustments to Appropriated Value	-235			
	FY 1998 Pres Bud Request	50	0	0	

0

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Change Summary Explanation: Funding: FY 1996- Funding (-235) reprogrammed to higher priority requirements

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	STIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605803A Technical Information Activities	ritle echnical	Informa	tion Activ	/ities	a e	PROJECT M733
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M733 Acquisition Technology Act	0	2134	2221	2226	2186	2160	2015	2011	2011 Continuing Continuing	Continuing

A. Mission Description and Justification: This project provides for the engineering of Army acquisition process improvement through the application of decision support value-added analysis. Supports integrated management activities such as Horizontal Technology Integration and Army Ballistic Missile Defense. This project also provides an environment for the analysis and evaluation of new information technologies, concepts and applications in support of the Army acquisition community's dynamic and expert information systems. This project provides funds to conduct analysis and evaluation of alternative acquisition strategies using techniques such as V requirements and for the engineering of Army acquisition process improvement through the application of decision support and expert information systems.

FY 1996 Accomplishments: Program not funded in FY 1996.

FY 1997 Planned Program:

- Develop a simulation and logical modeling test and evaluation environment that provides a prototype development tool in support of technology base initiatives.
- Design application program and user interface utilities for executive level information systems that offer Standard Query Language (SQL) services to Army Acquisition Corps (AAC) corporate and global databases.
- Handbook, Analytic/Technical Support for Army Support for Army Science and Technology Programs, Long-Range Planning and Policy Analysis, Resource Allocation Analysis, Cost Tracking and Analysis, Cost Effectiveness and Database Management/Financial Analysis, Synthetic Aperture Continue analysis of acquisition program financial programming and budgeting requirements. Initiate development of Weapon Systems Radar (SAR) Technology Application Concept Research/Analysis.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 2134

FY 1998 Planned Program:

- Continue development of simulation and logical modeling test and evaluation environment that provides a prototype development tool in support of technology base initiatives, and beta test selected modules. 2221
 - Validate application programs and user interface utilities for executive level information systems that offer SQL services to AAC corporate and global databases.

Project M733

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Exhibit R-2 (PE 0605803A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEE	T (R-2 Ex	hibit)	DATE Febr	February 1997
BUDGET ACTIVITY 6 - Managemer	вирсет Астіvітץ 6 - Management and Support	PE NUMBER AND TITLE 0605803A Tech	AND TITLE A Technic	al Informati	PE NUMBER AND TITLE 0605803A Technical Information Activities	PROJECT NT33
FY 1998 Planned P	 FY 1998 Planned Program: (continued) Continue analysis of acquisition program financial programming and budgeting requirements. Continue development of Weapon Systems Handbook, Analytic/Technical Support for Army Support for Army Science and Technology Programs, Long-Range Planning and Policy Analysis, Resource Allocation Analysis, Cost Tracking and Analysis, Cost-Effectiveness and Database Management/Financial Analysis, SAR Technology Application Concept Research/Analysis. 	mming and bu for Army Scie 3, Cost-Effecti	dgeting requirence and Techn	ements. Continue tology Programs, abase Manageme	e development of Weapor Long-Range Planning ar mt/Financial Analysis, S.	n Systems nd Policy Analysis AR Technology
FY 1999 Planned Program:	 rogram: - Validate simulation and logical modeling test and evaluation environment that provides a prototype development tool in support of technology base initiatives. - Distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language (SQL) services to AAC corporate and global databases. 	on environmer rface utilities 1 abases.	nt that provides for executive le	s a prototype devo	elopment tool in support systems that offer Standa	t of technology rd Query
Total 2226	 Continue analysis of acquisition program financial programming and budgeting requirements. Continue development of Weapon Systems Handbook, Analytic/Technical Support for Army Support for Army Science and Technology Programs, Long-Range Planning and Policy Analysis, Resource Allocation Analysis, Cost Tracking and Analysis, Cost-Effectiveness and Database Management/Financial Analysis, SAR Technology Application Concept Research/Analysis. 	mming and bu for Army Sci s, Cost-Effecti	dgeting require ence and Techi veness and Da	ements. Continue nology Programs, tabase Manageme	development of Weapon Long-Range Planning a ent/Financial Analysis, S.	n Systems ind Policy Analysi: AR Technology
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 0 0	EY 1997 2180 2134	FY 1998 2170	F <u>Y 1999</u> 2161	
Adjustification to Appropriate	opriated value equest	0	2134	2221	2226	
Project M733	Page	Page 17 of 17 Pages	Sa		Exhibit R-2 (PE 0605803A)	15803A)
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	RDT&E BUDGET ITEM JU	EM JUS	TIFICA	TION SI	HEET (R	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	197
80DG 6 - 1	вирбет АСТІVITY 6 - Management Support			PE NI 060 Effe	DE NUMBER AND TITLE 0605805A Muni Effectiveness a	PENUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	Standar Ifety	dization			
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	16692	3211	6317	5895	6331	6275	5609	5731	Continuing	Continuing
DF21	DF21 North Atlantic Treaty Organization (NATO) Small Arms Evaluation	273	274	311	0	0	0	0	0	0	858
DF24	DF24 Conventional Ammunition Demilitarization	15571	1694	4616	4607	4728	4691	4785	4892	Continuing	Continuing
D293	D293 Field Artillery Ammunition (NATO) Engineering Development	260	0	83	86	0	0	0	0	0	1672
M296	M296 Pyrotechnic Reliability and Safety	0	299	708	614	782	774	0	0	0	3545
M857	M857 Explosive Safety Standards	588	576	599	588	821	810	824	839	Continuing	Continuing

FY 1997. The projects in this Program Element support studies and analyses of numerous Army and Joint-Services programs and are correctly placed in Budget Activity 6. improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board. Pyrotechnic Reliability and Safety (Project M296) is a new start for mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear munitions and weapons systems in a realistic operational environment. It provides for NATO interchangeability testing; joint munitions effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of Mission Description and Budget Item Justification: This Program Element supports continuing technology investigations. It provides a coordinated tri-service demilitarization methods for existing conventional ammunition; evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and

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Exhibit R-2 (PE 0605805A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Managem	BUDGET ACTIVITY 6 - Management Support			PEN 060	PE NUMBER AND TITLE 0605805A Munitions Sta Effectiveness and Safety	TITLE Munitions ss and Sa	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	rdization			PROJECT DF21
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DF21 North Atlantic Tre Arms Evaluation	North Atlantic Treaty Organization (NATO) Small Arms Evaluation	273	274	311	0	0	0	0	0	0	858
A. Mission Do among all NAT NATO STAN	A. Mission Description and Justification: This program assures complete interchangeability of small caliber and automated cannon-caliber ammunition and weapons among all NATO countries with all of the associated logistic, strategic and tactical advantages. Project involves development, maintenance and testing compliance of NATO STANAGS and staffing of the NARTC.	rogram assur	es complete ategic and ta	interchanges ıctical advan	ability of smatages. Proje	all caliber an ct involves o	id automated levelopment	l cannon-cali , maintenanc	iber ammun	ition and we	apons e of
FY 1996 Accomplishments:	mplishments:										
•	55 Continued to staff, equip and maintain the NARTC for 9mm, 5,56mm, and 7,62mm only	maintain the	NARTC for	9mm, 5.56r	nm. and 7.63	2mm only					
•	70 Continued to maintain standardization of previously qualified calibers, including 25mm	irdization of p	reviously qu	nalified calib	vers, includin	ie 25mm					
•	39 Incorporated use of new environmentally safe test method as an alternate to current hazardous procedures	ronmentally s	afe test met	hod as an alt	ernate to cur	rent hazardo	us procedur	es			-
•	71 Initiated implementation of the 6215 pressure transducer for use in all NATO standardization testing, including the 25mm	he 6215 press	ure transduc	er for use in	all NATO St	tandardizatio	on testing, in	cluding the	25mm		
•	10 Completed qualification of 5.56mm, M856	56mm, M85t	Trace ammunition	unition			ô	0			
		7mm ammun	ition								
Total	273										
FY 1997 Planned Program:	ed Program:										
•	60 Continue to staff, equip and maintain the NARTC for 9mm, 5,56mm and 7,62mm only	naintain the N	IARTC for 9	mm. 5.56m	m and 7.62m	only					
•	70 Continue to maintain standardization of previously qualified calibers, including 25mm	dization of pre	eviously qua	lified calibe	rs, including	25mm					
•	39 Complete implementation of the 6215 pressure transducer for all NATO standardization testing, including 25mm	the 6215 pre-	ssure transdu	icer for all N	VATO standa	rdization tes	sting, includi	no 25mm			
•	42 Other activities, including Partners in Peace	rtners in Peac	e initiatives				(0	9			
•	32 Initiate facilitization of NARTC for 12.7mm	TC for 12.7m	m testing								
			0								

FY 1998 Planned Program:

Total

Continue to staff, equip and maintain the NARTC for 9mm, 5.56mm and 7.62mm only 909

Complete 12.7mm Manual of Proof and Inspection (MOPI) Small Business Innovation Research (SBIR) Program Continue to maintain standardization of previously qualified calibers, including 25mm

Project DF21

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Exhibit R-2 (PE 0605805A)



Project PATIVITY Project DEZI	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEE	T (R-2 Exhib	it)	DATE February 1997
### dip	вирдет АСТІИІТҮ 6 - Management Support	PE NUMBER 0605805 Effectiv	AND TITLE Munitions (eness and Safe	Standardization ety	
EY 1996 FY 1997 FY 1998 FY 1999 278	998 Planned Pl 26 32 58 65 63	cased telescoped ammuni testing ng	tion		
ident's Budget 278 286 274 287 286 274 287 286 274 311 0 9 Summary Explanation: Funding realigned in FY 1999 to support higher priority requirements. Page 3 of 10 Pages Exhibit R-2 (PE 0805805A)	FY 1999 Planned Program: Project not funded in FY 99				
ge Summary Explanation: Funding realigned in FY 1999 to support higher priority requirements. Page 3 of 10 Pages Exhibit R-2 (PE 0605805A)	Summary Budget	FY 1	FY 1	FY 1999 275	
ge Summary Explanation: Funding realigned in FY 1999 to support higher priority requirements. Page 3 of 10 Pages Exhibit R-2 (PE 0605805A)	FY 1998 Pres Bud Request	0	311	0	
(ACOOCOOL T. 1) LA TREE J. 10 T. RES	Change Summary Explanation: Funding realigned in FY 199	9 to support higher priori	ty requirements.	й х	# D 2 (DE 0606A)
	rioject Drai	1 485 2 01 101 48	250	LAIID	

	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	LEET (F	IFICATION SHEET (R-2 Exhibit)	bit)		DATE		
вирдет Астіvіту 6 - Management Support	ent Support			PE NI 060 Effe	PE NUMBER AND TITLE 0605805A Muni Effectiveness at	DE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	Standar afety	dization	L O	PROJ DF2	PROJECT
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DF24 Conventional	Conventional Ammunition Demilitarization	15571	1694	4616	4607	4728	4691	4785	4892	Continuing	Continuing
A. Mission Descriand conventional aracceptable alternations in the res	A. Mission Description and Justification: This project supports a continuing technology evaluation of demilitarization methods for existing conventional ammunition and conventional ammunition recovered from formerly used defense sites (FUDS). It will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD) for recovery/recycle/reclamation equipment and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and recovered munitions from FUDS.	roject suppor arly used defe tion (OB/OD unt and recov	ts a continui ense sites (FI) for recove ered munitio	ng technolog UDS). It wi ry/recycle/re ons from FU	gy evaluatio Il complete i clamation e DS.	a continuing technology evaluation of demilitarization methods for existing conventional ammunition is sites (FUDS). It will complete the development and demonstration of new, safe, and environmental for recovery/recycle/reclamation equipment and processes to reduce the extremely large stockpile of red munitions from FUDS.	rization met nent and dem d processes t	hods for exiconstration of reduce the	sting conven of new, safe, extremely la	tional ammu and environ arge stockpil	nition nentally e of
3614 Initiate 3614 Initiate 8715 Develo 1292 Initiate 727 Cryofre 524 Develo 108 Develo 366 Conver	Initiated supercritical water oxidation (SCWO) of carcinogenic/toxic-colored smokes and dyes Developed plasma arc furnace system for demilitarization of pyrotechnic ordnance Initiated development of explosives rework process for cast-loaded munitions Cryofracture demilitarization for explosives-loaded small munitions Developed a real-time metal emissions monitoring system Developed a high pressure CO ² blastout system for removal of press-loaded explosives Converted CS (tear gas) to saleable products via hydrolysis Developed advanced prototype energetic materials removal technology	vidation (SCV): system for dosives rework for explosive missions mono? blastout sy eable product e energetic m	VO) of carci emilitarizati process for s-loaded sma intoring syst stem for rem s via hydrol aterials rem	O) of carcinogenic/toxic-colored militarization of pyrotechnic ordn process for cast-loaded munitions loaded small munitions toring system em for removal of press-loaded evia hydrolysis terials removal technology	ic-colored si chnic ordns munitions s s-loaded exi	mokes and d	se				
• 100 Total 15571	Completed type classification of the XM221	of the XM22	1 Demolitio	n shaped clij	oped charge	Demolition shaped clipped charge (AMC to ARDEC)	RDEC)				
FY 1997 Planned Program:	rogram: Continue supercritical water oxidation of carcinogenic/toxic-colored smokes and dyes Continue cryofracture demilitarization for explosives-loaded small munitions Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	xidation of ca urization for e search/Small	rcinogenic// xplosives-lc Business Te	toxic-colore paded small chnology Ti	d smokes an nunitions ansfer (SBI	d dyes R/STTR) Pro	grams				
FY 1998 Planned Program:	rogram: Complete testing and evaluation of prototype Continue development of explosives rework p	on of prototyp osives rework oment for den	e SCWO sy process for tilitarization	SCWO system for demilitarization process for cast loaded munitions litarization	nilitarizatios munitions	SCWO system for demilitarization of colored smokes and dyes process for cast loaded munitions litarization	smokes and	lyes			
Project DF24				Page 4 of 10 Pages) Pages			Exhibit	Exhibit R-2 (PE 0605805A)	305805A)	





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (I	3-2 Exhib	it)	DATE February 1997	
BUDGET ACTIVITY 6 - Management Support	nt Support	PENUMBER AND TITLE 0605805A Munitions Sta Effectiveness and Safety	TITLE Munitions S ss and Saf	PENUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT DF24	т. "
FY 1998 Planned I 187 583 105 Total 4616	FY 1998 Planned Program: (continued) 187 Continue development of advanced energetic materials removal technology 583 Initiate development of recycle/reuse technology for magnesium/aluminum 105 Explore destruction of residual energetic material via gas phase (hot hydrogen) reduction Total 4616	noval technology nesium/aluminum phase (hot hydrogen) reduction			
FY 1999 Planned Program:	rogram: Continue development of recycle/reuse technology for magnesium/aluminum Continue development of residual energetic material destruction via gas phase (hot hydrogen) reduction Initiate development of recycle/reuse technology for smoke pot oils Initiate development of single base propellant reclamation technology demonstration Initiate development of military applications for recycle/reuse of recovered energetics Explore advanced cutting technology Explore electrochemical oxidation technology for energetics	gnesium/aluminum uction via gas phase te pot oils technology demons use of recovered en	(hot hydrogen) tration ergetics	reduction	·	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1008 Pres Bud Request	Summary FY 1996 Budget 16459 ropriated Value -1351 roquest 15571	FY 1997 731 1694 0	FY 1998 4609 4616	FY 1999 4589 4607		
Change Summary Ex	on: Funding-FY 1997 (+963) Congressions destroy conventional munitions	e for continuation of	testing of cryo	fracture for demilitari	zation of selected difficult-to-	
Project DF24	Pa	Page 5 of 10 Pages		Exhib	Exhibit R-2 (PE 0605805A)	į.
		1224			Iten	Item 126

	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (F	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1	1997
BUDGET ACTIVITY 6 - Management Support	nt Support			PE NI 060 Eff	PE NUMBER AND TITLE 0605805A Muni Effectiveness at	PE NUMBER AND TITLE 0605805A Munitions Sta Effectiveness and Safety	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	dization			PROJECT D293
ŏ	COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D293 Field Artillery An Development	Field Artillery Ammunition (NATO) Engineering Development	260	0	83	86	0	0	0	0	0	1672
A. Mission Descripti	Mission Description and Justification: This project supports	oject support	s US/NATC) howitzer an	nd ammunit	on rationaliz	ation, standa	ırdization, in	US/NATO howitzer and ammunition rationalization, standardization, interoperability, and compatibility.	ty, and com	oatibility.
FY 1996 Accomplishments:	nments: Engineering support Interoperability testing; translation and interpretation	ation and inte	erpretation								
FY 1997 Planned Pr	FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program: • 50 Enginee • 33 Interope Total 83	ogram:. Engineering support of 155mm joint interoperability requirements Interoperability testing of Modular Charge System (MCS); translation	n joint intero dular Charge	perability re System (M	equirements CS); translat	ion						
FY 1999 Planned Program: • 50 Engine • 36 Interop	ogram: Engineering support of 155mm joint interoperability requirements Interoperability testing of NATO projectiles and MCS; translation	n joint intero TO projectile	perability res	equirements translation							
B. Project Change Summary FY 1997 President's Budget Appropriated Value	<u>Summary</u> Budget		FY 1996 267 274		FY 1997 0	FY 1998 0	FY 1999	60 0 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	opriated Value equest		-14 260	4.0	00	83	•	98			
Change Summary Exp	Change Summary Explanation: Funding increase in FY 98 (+83)/FY 99 (+86) to support continuation of US/NATO howitzer and ammunition rationalization, standardization, interoperability and compatibility.	FY 98 (+83), roperability a	FY 99 (+86 ind compati) to support bility.	continuatior	of US/NAT	'O howitzer	and ammuni	tion rational	ization,	
Project D293				Page 6 of 10 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0605805A)	605805A)	





	RDT&E BUDGET ITEM JUS	TEM JUS	STIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 19	1997
BUDGET ACTIVITY 6 - Management Support	ent Support			PE NO 060	PE NUMBER AND TITLE 0605805A Muni Effectiveness al	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	Standar	rdization		•	PROJECT M296
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M296 Pyrotechnic F	Pyrotechnic Reliability and Safety	0	667	708	614	782	774	0	0	0	3545
A. Mission Descri resolve reliability, s	A. Mission Description and Justification: New start in FY 1997. This project will support pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics, including training realism. Project will result in	tart in FY 19 g issues that	97. This pro impact produ	ject will sup	port pyrotec	hnic research Id use of pyr	ı, developm otechnics, ii	ent and testi ncluding trai	ng to identify ning realism	y, characteriz	e and I result in
FY 1996 Accompl	FY 1996 Accomplishments: Project not funded in FY 1996	FY 1996		y acceptaolo	indicate of the second						
FV 1997 Planned Program:	Program:										
• 185	Initiate development of safer pyrotechnic munitions/systems (e.g., simulators, flares, igniters)	pyrotechnic	munitions/sv	stems (e.g.,	simulators. f	lares, igniter	(8)				
96		lative materi	als and desig	ns for muniti	ons/systems	utilizing ma	gnesium				
• 185		rials and proc	sess changes	to preclude 1	nagnesium 1	noisture reac	tion and hy	drogen gene	ration		
185		tion for shelf	f life of pyrol	echnics				1			
	Small Business Innovation Research/Small	esearch/Sma	Il Business I	echnology I	ransfer (SBI	Business Technology Transfer (SBIR/STTR) Programs	ograms				
Total 667											
FY 1998 Planned Program:	Program:										
108	Initiate development and investigate merit of substitute materials for carcinogenic and critical materials	stigate merif	of substitute	materials fo	r carcinoper	ic and critic	al materials				
• 400		er pyrotechni	c munitions/	systems.	b						
• 200		terials and pr	ocess change	s to preclude	e magnesiun	moisture re	action and b	nydrogen ger	neration	•	
Total 708))						
FY 1999 Planned Program:	Program:										
• 240	Continue development of safer pyrotechnic munitions/systems	r pyrotechni	c munitions/	systems							
• 174		nation for she	elf life of pyr	otechnics							
• 200	Continue development and investigate merit of substitute materials for carcinogenic and critical materials	vestigate me	rit of substitu	ite materials	for carcinog	enic and crit	ical materia	S			
Total 614)			0			!			
Project M296				Page 7 of 10 Pages	O Pages			T	Evhihit B 2 (BE 0606805A)	100000	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATION	ON SHEET	(R-2 Exhib		DATE February 1997	1997
вирсет Астімту 6 - Management Support		PE NUMBER AND TITLE 0605805A Muni Effectiveness an	PENUMBER AND TITLE 0605805A Munitions Star Effectiveness and Safety	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety		PROJECT M296
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 0	FY 1997 682 667	FY 1998 679	FY 1999 579		
Adjustments to Appropriated Value FY 1998 Pres Bud Request	0 0	0	708	614		
Project M296	Pa	Page 8 of 10 Pages		Exhibi	Exhibit R-2 (PE 0605805A)	

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BUDGET ACTIVITY 6 - Management Support	nt Support			PE N 06(Eff	PE NUMBER AND TITLE 0605805A Muni Effectiveness al	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	Standar rfety	dization			PROJECT M857
S	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M857 Explosive Safety Standards	y Standards	588	576	599	588	821	810	824	839	Continuing	Continuing
A. Mission Descript	A. Mission Description and Justification: Suppo	Supports explosive effects research and testing to quantify hazards and to develop techniques to mitigate these hazards in all	effects resea	arch and test	ing to quant	ify hazards a	nd to develo	p technique	s to mitigate	these hazard	s in all
DOD manufacturing, improvement of quan criteria.	DOD manufacturing, testing, transportation, maintenance, storage and disposal of ammunition and explosives operations. Results are essential to the development amprovement of quantity-distance standards, hazard classification procedure, cost effective explosion-resistant facility design procedures, and personnel hazard/protect criteria.	nance, storage classification	and dispose procedure,	al of ammur cost effectiv	ition and ex e explosion-	plosives operesistant fac	rations. Resility design p	ults are esse procedures, a	and disposal of ammunition and explosives operations. Results are essential to the development and procedure, cost effective explosion-resistant facility design procedures, and personnel hazard/protection	evelopment I hazard/pro	and tection
FY 1996 Accomplishments:	hments:			į	;		į				
0/1	Collected and analyzed data for revising tri-service and NATO hazard interpretations for Hazard Divisions 1.2 and 1.6 ammunition outside and inside structures	or revising tri	-service and	I NATO haz	ard interpret	ations for Ha	azard Divisi	ons 1.2 and	1.6 ammunit	on outside	nd inside
• 120	Developed improved tri-service design procedures and improved computer codes for explosion-resistant structures	ce design pro	cedures and	improved c	omputer cod	es for explos	sion-resistan	t structures			
• 50	Developed improved explosives and munitions tests and collect characterization data	es and munit	ions tests an	id collect chi	aracterization	n data					
208	Developed improved DOD guidelines for munitions storage facilities	idelines for n	nunitions sto	orage faciliti	es sing antota d	100					
Total 588		dva nun sası	Topo and	sordya nami	ves salety d	atabases					
FY 1997 Planned Program:	ogram:										
177	Collect and analyze data for revising DOD	evising DOD	and NATO	hazard inter	pretation for	Hazard Div	isions 1.1, 1	,3, 1.4, and	and NATO hazard interpretation for Hazard Divisions 1.1, 1.3, 1.4, and 1.6 ammunition outside and inside	on outside a	nd inside
4	structures										
78	Continue development of improved tri-service design procedures and improved computer codes for explosion-resistant structures. Continue development of improved explosives and munitions tests and characterization data	roved tri-serv roved explosi	ice aesign p ves and min	procedures a	na improved and characte	computer co	odes tor exp	losion-resist	ant structure		
118	Continue development of improved DOD guidelines for munitions storage facilities	roved DOD g	uidelines fo	r munitions	storage facil	ities					
• 40	Continue to conduct other hazards analyses	ards analyses	and expand	l'automate e	xplosives sat	and expand/automate explosives safety data bases	es				
• 14	Small Business Innovation Research/Small	search/Small	Business Te	schnology T	ransfer (SBI	Business Technology Transfer (SBIR/STTR) Programs	ograms				
Total 576				3	,		b				
Project M857				Page 9 of 10 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0605805A)	305805A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SATION SHEET	R-2 Exhib	it) DATE	E February 1997
BUDGET ACTIVITY 6 - Management Support	nt Support	PE NUMBER AND TITLE 0605805A Muni Effectiveness and	PENUMBER AND TITLE 0605805A Munitions Sta Effectiveness and Safety	PE NUMBER AND TITLE 0605805A Munitions Standardization Effectiveness and Safety	PROJECT M857
FY 1998 Planned Program:	to collect and analyze data for revnd inside structures development of improved tri-service development of improved explosimproved DOD and NATO explosito conduct other hazards analyses to conduct other hazards analyses 1.1, 1.2, 1.3, 1.4, 1.4S, 1.5 and 1.1 development of improved explosito development of improved explosito develop improved DOD and NA to conduct other hazards analyses	ising DOD and NATO hazard interpretation for Hice design procedures and improved computer codves and munitions tests and characterization data ives safety guidelines for munitions storage, exploand expand/automate explosives safety data bases idea for revising DOD, NATO and United Nation of the esting procedures and improved computer codves and munitions tests and characterization data ATO explosives safety guidelines for munitions storand expand/automate explosives safety data bases	interpretation for H oved computer coc tracterization data tions storage, explc es safety data bases oved computer cod uracterization data es for munitions st es safety data bases	ising DOD and NATO hazard interpretation for Hazard Divisions 1.1, 1.3, 1.4, and 1.0 de design procedures and improved computer codes for explosion-resistant structures wes and munitions tests and characterization data lives safety guidelines for munitions storage, explosives operating and field operation and expand/automate explosives safety data bases and expand/automate explosives safety data bases ce design procedures and improved computer codes for explosion-resistant structures or and munitions tests and characterization data ATO explosives safety guidelines for munitions storage, explosives operating and field and expand/automate explosives safety data bases	4, and 1.6 ammunition tructures peration facilities tructures and field operation facilities
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Values FY 1998 Pres Bud Request		FY 1996 FY 1997 604 589 621 576 -33 0 588 576	FY 1998 570 599	FY 1999 552 588	
Project M857		Page 10 of 10 Pages	S	Exhibit R-2	Exhibit R-2 (PE 0605805A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	HEET (R	R-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605853A Envi	TITLE Invironm	PE NUMBER AND TITLE 0605853A Environmental Conservation	nservatic	uc		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2493	1723	1778	2977	3598	3267	3297	3362	Continuing	Continuing
M0CC Environmental Conservation - AMC Test Ranges	2203	1467	1498	2636	3147	2969	3042	3109	Continuing	Continuing
M1CC Environmental Conservation - AMC Major Subordinate Commands/Laboratories	10	113	148	203	188	182	140	139	Continuing	Continuing
M5CC Environmental Conservation - USASSDC	280	143	132	138	263	116	115	114	Continuing	Continuing

as: Class O - Project needed to cover essential administrative, personnel, and other costs required to manage environmental activities and monitor environmental conditions appearance, including landscaping, or normal building maintenance associated with present day, non-cultural uses of historic buildings. Army defines environmental effort conservation efforts at RDTE facilities. It focuses on compliance with natural and cultural resource laws and on responsible management of natural and cultural resources Management; preparation of natural and cultural resource management plans; design, construction, maintenance or repair costs specifically required to restore, improve or standard, and deadline for compliance is in the future. Includes effort directed toward support of installations or operations required for general research and development Mission Description and Budget Item Justification: This program ensures that resources are available to fund actions specifically required to protect or enhance natural to ensure resources are used wisely and are protected. It finances studies and surveys to identify, inventory, and manage natural (endangered or threatened species, other equivalent; correct deficiencies where a statutory or regulatory deadline has passed; Class II - projects required to comply with an established natural or cultural resource and cultural resources, preserve access to improved and unimproved training areas, and make necessary repairs to minimize erosion and otherwise rehabilitate lands and cultural resource environmental laws; correct deficiencies cited in an inspection or notice of violation by a natural or cultural resource regulatory agency, or host nation associated with compliance. Class I - support compliance with legally binding agreements or judgments under applicable Federal, State, local or host nation natural or appropriated RDTE funds attributable to fish, wildlife, agricultural outleasing and timber management activities. It does not include normal maintenance required for waters at Army RDTE installations, laboratories and test ranges. No Operation and Maintenance, Army (OMA) appropriation funds are budgeted for environmental wildlife, timber, agricultural lands, training areas, etc.) and cultural resources and evaluation of the resources so identified and inventoried; Integrated Training Area maintain natural or cultural resources; supplies and equipment required to carry out applicable natural and cultural resources management activities. It includes use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605853A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605853A Envir	PE NUMBER AND TITLE 0605853A Environmental Conservation	ental Co	nservatio	1	4 2	PROJECT MOCC
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M0CC Environmental Conservation - AMC Test Ranges	2203	1467	1498	2636	3147	2969	3042	3109	3109 Continuing Continuing	Continuing

Range (WSMR), NM. The operations are critical to the infrastructure and execution of the Army testing mission. Improper management of natural and cultural resources at management requirements, at Yuma Proving Ground (YPG), AZ; Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and White Sands Missile A. Mission Description and Justification: Project MOCC resources in this project ensure an adequate level of funding for environmental natural and cultural resource these installations could shut down the test mission.

FY 1996 Accomplishments:

2203 Funded Class I and Class II environmental natural and cultural resource management programs such as, management/protection of endangered species, preparation of historic preservation plans, and preservation of historic sites and wetlands management/studies and shoreline erosion. Total

FY 1997 Planned Program:

Fund Class O, Class I and Class II environmental natural and cultural resource management programs such as management/protection of endangered species, and preservation of cultural resources, national historic preservation, wet lands management/studies and shoreline erosion. Small Business Innovation Research Small Business Technology Transfer (SBIR/STTR) Programs. 1467 Total

FY 1998 Planned Program:

Fund Class O, Class I and Class II environmental natural and cultural resource management programs such as management/protection of endangered species, and preservation of cultural resources according to the national historic preservation plans. Also funds ecosystem management, wildlife surveys and habitat delineation.

1498 Total

FY 1999 Planned Program:

Fund Class O, Class I and Class II environmental natural and cultural resource management programs such as management/protection of endangered species, and preservation of cultural resources according to the historic preservation plans. Also fund ecosystem management, wildlife surveys and habitat delineation. 2636

2636

Total

Project M0CC

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Exhibit R-2 (PE 0605853A)





RDT&E BUDGET ITEM JUSTIFICAT	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it) DATE	E February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605853A Envi	D TITLE Environme	דודוב Environmental Conservation	PROJECT MOCC
B. Project Change SummaryFY 1996FY 1997 President's Budget2261Appropriated Value2324Adjustments to Appropriated Value-121FY 1998 President's Budget Request2203	FY 1997 1498 1467 1467	FY 1998 658 1498	<u>FY 1999</u> 1700 2636	
Change Summary Explanation: Funding: FY 1998 increase of (+840) required for "must fund" environmental compliance. FY 1999 increase of (+936) required for "must fund" environmental compliance.	onmental compliance			
Project M0CC	Page 3 of 6 Pages		Exhibit R-2	Exhibit R-2 (PE 0605853A)
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	JEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 6 - Management and Support			PE NI 000	PE NUMBER AND TITLE 0605853A Envi	PE NUMBER AND TITLE 0605853A Environmental Conservation	ental Co	nservatic	uc	a e	PROJECT M1CC
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1CC Environmental Conservation - AMC Major Subordinate Commands/Laboratories	10	113	148	203	188	182	140	139	139 Continuing Continuing	Continuing

A. Mission Description and Justification: Project M1CC resources in this project ensure an adequate level of funding for environmental natural and cultural resource Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, Dover, NJ; Soldier Systems Command management requirements, as discussed in the program element's mission description and budget item justification on page one of this exhibit, at Army Research (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), Natick, MA.

FY 1996 Accomplishments:

Funded Class I and Class II environmental natural and cultural resource management programs such as survey of critical habitats and species to assess potential existence of threatened/endangered species on installations.

10 Total

FY 1997 Planned Program:

Fund Class I and Class II environmental natural and cultural resource management programs such as required surveys of historical buildings and preservation of the building. 110

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total

FY 1998 Planned Program:

Fund Class I and Class II environmental natural and cultural resource management programs such as required surveys of historical buildings and 148

preservation of the building.

148 Total

FY 1999 Planned Program:

Fund Class I and Class II environmental natural and cultural resource management programs such as required surveys of historical buildings and 203

preservation of the building.

203

Total

Project M1CC

1233

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Exhibit R-2 (PE 0605853A)



RDT&E BUDGET ITEM JUSTIFIC	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibi	(t) DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605853A Envi	D TITLE Environmer	TITLE Environmental Conservation	PROJECT M1CC
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 FY 1997 10 115 10 113 0 113	FY 1998 117 148	FY 1999 120 203	
Change Summary Explanation: Funding: FY 1998 increase of (+31) required for "must fund" environmental compliance. FY 1999 increase of (+83) required for "must fund" environmental compliance.	fund" environmental compliance.			
Project MICC	Page 5 of 6 Pages		Exhibit R-2 (Exhibit R-2 (PE 0605853A) Item 127
	1234			171

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605853A Envi	TITLE Invironm	ਮਾਸ਼ E Environmental Conservation	nservati		<u> </u>	PROJECT M5CC
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M5CC Environmental Conservation - USASSDC	280	143	132	138	263	116	115	114	Continuing	Continuing
A. <u>Mission Description and Justification:</u> Project M5CC Environmental Conservation - U.S. Army Space and Strategic Defense Command (USASSDC): Resources in this project ensure an adequate level of funding for environmental natural and cultural resource management requirements, at USASSDC.	ct M5CC Envir environment	ronmental C al natural an	onservation d cultural res	- U.S. Army source mana	Space and gement requ	Strategic Del	fense Comm USASSDC	nand (USAS	SDC): Resou	rces in
 FY 1996 Accomplishments: 280 Developed an Historic Preservation Plan for management of historic properties to comply with National Historic Preservation Act. Total 280 	ervation Plan f	or managem	ent of histor	ic properties	to comply v	vith Nationa	l Historic Pr	eservation A	Act.	
 FY 1997 Planned Program: 140 Continue development of Historic Preservation Plan for management of historic properties to comply with National Historic Preservation Act. A Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Total 143 	istoric Preserv Research/Smal	ation Plan fo I Business T	r manageme echnology T	nt of histori ransfer (SBI	tion Plan for management of historic properties to comp Business Technology Transfer (SBIR/STTR) Programs.	to comply w ograms.	ith Nationa	l Historic Pr	eservation Ac	#
 FV 1998 Planned Program: 132 Continue development of Historic Preservation Plan for management of historic properties to comply with National Historic Preservation Act. Total 132 	istoric Preserv	ation Plan fo	r manageme	nt of histori	c properties	to comply w	ith National	l Historic Pre	eservation Ac	; ;
FY 1999 Planned Program: • 138 Continue development of Historic Preservation Plan for management of historic properties to comply with National Historic Preservation Act Total 138	istoric Preserv	ation Plan fo	r manageme	nt of histori	c properties	to comply w	ith National	l Historic Pre	eservation Ac	+
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 193 199		FY 1997 146 143	FY 1998 0	FY 1999	66 0			
Adjustments to Appropriated value FY 1998 President's Budget Request Change Summary Explanation: Funding: FY 1996 increase (+81) reprogrammed for environmental compliance. FY 1998 increase of (+132) required for "must fund" environmental co FY 1999 increase of (+138) required for "must fund" environmental co	ed for environ for "must func for "must func	81 280 mental compl l" environmer l" environmer	81 280 143 ental compliance. environmental compliance. environmental compliance.	143 ince.	132	⊷	138			
Project M5CC			Page 6 of 6 Pages	6 Pages			Exhib	Exhibit R-2 (PE 0605853A))605853A)	
			1235							Item 127

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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	797
800G	BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605854A POIL	PE NUMBER AND TITLE 0605854A Pollution Prevention	Preventi	uc			
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	11004	13602	5353	4681	9899	2275	2308	2347	Continuing	Continuing
MOPP	M0PP Pollution Prevention - AMC Test Ranges	1537	534	0	1248	921	827	841	855	Continuing	Continuing
M1PP	M1PP Pollution Prevention - AMC Major Subordinate Commands/Laboratories	254	140	156	159	140	135	134	135	Continuing	Continuing
MSPP	M5PP Pollution Prevention - USASSDC	3228	1916	2290	1231	1273	447	452	459	Continuing	Continuing
M7PP	M7PP Pollution Prevention - Ozone Depleting Chemicals (ODC) Elimination	1926	782	0	0	6688	0	0	0	Continuing	Continuing
М8РР	M8PP Pollution Prevention - Acquisition Pollution Prevention	4059	10230	2907	2043	877	998	881	898	Continuing	Continuing

ozone-depleting chemicals and (2) hazardous and toxic chemicals and materials used in weapon system fire protection, cooling and refrigeration applications, manufacturing (rather than control or treat), through source reduction actions, the procurement and use of hazardous materials and the generation of hazardous waste; more efficient use of maintenance requirements, and procedures supporting materiel procurement such as the Joint Group for Acquisition Pollution Prevention. No Operations and Maintenance, personnel, and other costs required to manage environmental activities and monitor environmental condition associated with compliance; Class I - support compliance with Emergency Planning and Right-to-Know Act, and Executive Order 12856 (and others). The program support installations and operations required for general research and and maintenance processes and specialized test practices throughout the weapon system life cycle. These activities account for approximately 90 percent of the hazardous program. It finances primarily test and evaluation pollution prevention efforts addressing environmental compliance and mission readiness issues effecting Army weapon Army (OMA) funds are programmed for these purposes. Projects under this program meet Army definitions: Class 0 - Projects needed to cover essential administrative. hazardous materials and hazardous waste on the operational readiness of Army weapon systems and facilities. Issues include prove-out/engineering of alternatives to (1) legally binding agreements or judgments under applicable federal, state, local or host nation environmental laws; Class II - projects required to comply with established systems; supporting industrial facilities; and RDTE funded installations, laboratories and test ranges. Pollution prevention is any action designed to reduce or eliminate natural resources; recycling; and /or reduced emissions of toxins and other waste to the environment. Acquisition pollution prevention addresses the adverse impact of Mission Description and Budget Item Justification: This program funds the non-research portion of the Army's RDTE funded environmental pollution prevention standard, and deadline for compliance in the future. Class I and II projects comply with the Montreal Protocol, the Clean Air Act, the Pollution Prevention Act, the waste generated by the U.S. Army. This program includes the review and revision of standardized technical documentation containing design, procurement and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605854A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI	PE NUMBER AND TITLE 0605854A Pollu	PE NUMBER AND TITLE 0605854A Pollution Prevention	Preventi	uo		d N	PROJECT MOPP
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M0PP Pollution Prevention - AMC Test Ranges	1537	534	0	1248	921	827	841	855	855 Continuing Continuing	Continuing

pollution prevention requirements, at Yuma Proving Ground (YPG), AZ; Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and White Sands A. Mission Description and Justification: Project MOPP - Pollution Prevention - AMC Test Ranges: Resources in this project ensure an adequate level of funding for Missile Range (WSMR), NM. These operations are critical to the infrastructure and execution of the Army testing mission.

FY 1996 Accomplishments:

1537 Funded Class I and Class II pollution prevention projects such as conducting and reporting of Toxic Release Inventories, solid and hazardous waste reduction programs, implementation of storm water pollution prevention plans, purchase of spill response supplies and equipment, etc. 1537

FY 1997 Planned Program:

Total

Fund Class O, Class I and Class II pollution prevention projects such as reporting of Toxic Release Inventories, solid and hazardous waste reduction programs, implementation of storm water pollution prevention plans, purchase of spill response supplies and equipment, etc. 521

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 13

Total 534

FY 1998 Planned Program: Project not funded in FY 1998.

FY 1999 Planned Program:

Fund Class O, Class I and Class II pollution prevention projects such as reporting of Toxic Release Inventories, solid and hazardous waste reduction programs, implementation of storm water pollution prevention plans, purchase of spill response supplies and equipment, etc. Also fund Emergency Planning and Community Right-to-Know Act (EPCRA) compliance preventive projects. 1248

Total 1248

FY 1999	1217			1248
FY 1998	0			0
FY 1997	546	534		534
FY 1996	3398	3493	-1956	1537
B. Project Change Summary	FY 1997 President's Budget	Appropriated Value	Adjustments to Appropriated Value	FY 1998 President's Budget Request

Change Summary Explanation: Funding: FY 1996 decrease of (-1956) was reprogrammed into Environmental Compliance PE 0605856A for "must fund" requirements.

page 2 of 10 Pages

Project M0PP

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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 6 - Management Support	nt Support			PE NI 060	PE NUMBER AND TITLE 0605854A Pollution Prevention	ritle ollution	Preventi	no		a e	PROJECT M1PP
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1PP Pollution Prevention - AM Commands/Laboratories	Pollution Prevention - AMC Major Subordinate Commands/Laboratories	254	140	156	159	140	135	134	135	Continuing	Continuing
A. Mission Descripted adequate level of fun Center (ARDEC), Pin Natick, MA; and Arr	A. Mission Description and Justification: Project M1PP - Pollution Prevention - AMC Major Subordinate Commands/Laboratories: Resources in this project ensure an adequate level of funding for pollution prevention requirements, at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, Dover, NJ; Soldier Systems Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), Natick, MA; and Army Research Laboratory Materials Technology Directorate (ARLMTD), APG, MD.	MIPP - Poll equirements, Idier System ials Technolo	ution Prever at Army Res s Command sgy Directora	tion - AMC search Labo (SSCOM), 1	Major Subo ratory (ARL ormerly, Na 'D), APG, M	rdinate Com), Adelphi, N tick Researc ID.	ımands/Labo AD; Armam h, Developn	oratories: Rent Research	ution Prevention - AMC Major Subordinate Commands/Laboratories: Resources in this project ensure an at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), gy Directorate (ARLMTD), APG, MD.	his project er ent and Engi nter (NRDE)	nsure an neering C),
FY 1996 Accomplishments: • 254 Funded purcha:	hments: Funded Class I and Class II pollution prevention programs such as natural gas conversion at boiler plants, waste solvent replacement programs, purchase of spill response equipment, etc.	ollution prevent, impleme	ention prograntation of st	ams such as orm water p	natural gas o	conversion a rention plans	t boiler plans, purchase o	ts, waste sol f spill respo	vent replacer nse equipme	ment prograi nt, etc.	ns,
FY 1997 Planned Program: 137 Fund C of soun Total 140	rogram: Fund Class I and Class II pollution prevention programs such as waste solvent replacement programs, purchase of alternate fuel vehicles, construction of sound-absorbing barriers, implementation of storm water pollution prevention plans, purchase of spill response equipment, etc. Small Business Innovation Research Small Business Technology Transfer (SBIR/STTR) Programs.	ution prevent mplementation ssearch Smal	tion program on of storm v I Business T	is such as w water polluti echnology T	ion programs such as waste solvent replacement progran on of storm water pollution prevention plans, purchase of Business Technology Transfer (SBIR/STTR) Programs.	replacement on plans, pur (R/STTR) Pr	programs, p chase of spil ograms.	urchase of a	ılternate fuel quipment, et	vehicles, co c.	nstruction
FY 1998 Planned Program: • 156 Fund C of sour	ogram: Fund Class I and Class II pollution prevention programs such as waste solvent replacement programs, purchase of alternate fuel vehicles, construction of sound-absorbing barriers, implementation of storm water pollution prevention plans, purchase of spill response equipment, etc.	ution preven	tion program on of storm	ıs such as w xater pollut	aste solvent	replacement on plans, pur	programs, p chase of spil	urchase of a Il response e	ılternate fuel quipment, et	vehicles, co .c.	nstruction
FY 1999 Planned Program: 159 Fund C of sour	ogram: Fund Class I and Class II pollution prevention programs such as waste solvent replacement programs, purchase of alternate fuel vehicles, construction of sound-absorbing barriers, implementation of storm water pollution prevention plans, purchase of spill response equipment, etc.	ution prevent mplementati	tion program on of storm	ıs such as w vater pollut	aste solvent	replacement on plans, pur	programs, p chase of spil	urchase of a Il response e	olternate fuel quipment, et	vehicles, co c.	nstruction
Project M1PP				Page 3 of 10 Pages	10 Pages			Exhib	Exhibit R-2 (PE 0605854A))605854A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhib	it)	DATE Exprison 4007
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605854A Pollu	NO TITLE Pollution Prevention	revention	PROJECT WITPP
B. Project Change Summary FY 1996 FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request 254	EY 1997 143 7 140 8 140	FY 1998 121 156	EX 1999 121 159	
Change Summary Explanation: Funding: FY 1998 increase (+35) required for "must fund" environmental projects. FY 1999 increase (+38) required for "must fund" environmental projects.	projects. projects.			
Project MIPP	Page 4 of 10 Pages		ú	Exhibit R-2 (PE 0605854A)

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RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	16
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605854A Pollu	e NUMBER AND TITLE 0605854A Pollution Prevention	Prevention	uo		a 2	PROJECT M5PP
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M5PP Pollution Prevention - USASSDC	3228	1916	2290	1231	1273	447	452	459	459 Continuing Continuing	Continuing

A. Mission Description and Justification: Project M5PP - U.S. Army Space and Strategic Defense Command (USASSDC): Resources in this project ensure an adequate level of funding for pollution prevention requirements at the USASSDC.

FY 1996 Accomplishments:

3228 Funded pollution prevention programs such as hazardous material satellite areas, Halon reduction, removal and disposal of PCBs, etc. 3228 Total

FY 1997 Planned Program:

1869 Fund pollution prevention programs such as hazardous material satellite areas, recycling of metals, Halon reduction, pollution prevention, etc. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 1916 Total

FY 1998 Planned Program:

2290 Fund pollution prevention programs such as hazardous material satellite areas, recycling of metals, Halon reduction, pollution prevention, etc. 2290 Total

FY 1999 Planned Program:

1231 Fund pollution prevention programs such as hazardous material satellite areas, recycling of metals, Halon reduction, pollution prevention, etc. 1231 Total

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	2855	1957	1371	685	
Appropriated Value	2935	1916			
Adjustments to Appropriated Value	-293				
FY 1998 President's Budget Request	3228	1916	2290	1231	

Change Summary Explanation: Funding: FY 1996 increase (+293) reprogrammed for "must fund" environmental compliance projects.

FY 1998 increase of (+919) and FY 1999 increase of (+546) required for environmental compliance "must fund" project.

Project M5PP

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Exhibit R-2 (PE 0605854A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	łEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 6 - Management Support			PE NI 060	PE NUMBER AND TITLE 0605854A Pollution Prevention	ritte ollution	Preventi	on		a E	PROJECT M7PP
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M7PP Pollution Prevention - Ozone Depleting Chemicals (ODC) Elimination	1926	782	0	0	6688	0	0	0	0 Continuing Continuing	Continuing

1990 and section 326 of P.L. 102-484. Funding for this program has been transferred to 0605854/M8PP Pollution Prevention - Acquisition Pollution Prevention beginning ozone depleting chemicals on/for weapon systems. The program has been developed due to International Agreements (Montreal Protocol) Title VI of the Clean Air Act of A. Mission Description and Justification: Project M7PP - Pollution Prevention - ODC Elimination: Develop and implement the Army program to eliminate the use of with FY 2001.

FY 1996 Accomplishments:

•	284	284 Toxicological Assessment Support to Evaluate New Alternative Materials
•	162	Test and evaluation (T&E) alternative cleaning agents at the National Defense Center for Environmental Excellence (NDCEE)
•	225	T&E of alternat
0	100	T&E of Nuclear
•	1155	Development of Fire Safety Test Enclosure
Total	1926	

FY 1997 Planned Program:

	125	T&E of alternative Chemical-Biological Protective Overgarments testing agents
•	125	T&F of Nuclear Riological Protective Filter tecting agents

toca of inucical dividgical fiviective filler testing agents

T&E of Ammunition Inspection Cleaning Process Alternatives Development of Fire Safety Test Enclosure 104 409 19 782

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total

FY 1998 Planned Program: Project not funded in FY 1998.

FY 1999 Planned Program: Project not funded in FY 1999.

Project M7PP

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Exhibit R-2 (PE 0605854A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIO	ON SHEET	(R-2 Exhil	oit)	DATE February 1997	
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605854A Pollu	PE NUMBER AND TITLE 0605854A Pollution Prevention	revention	PRC PRC	PROJECT
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 1976 2031	FY 1997 799 782	FY 1998 0	FY 1999 0		
Adjustments to Appropriated Value FY 1998 President's Budget Request	-105 1926	782	0	0		
Project M7PP	Pag	Page 7 of 10 Pages		ш	Exhibit R-2 (PE 0605854A)	

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION SI	FIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management Support			PE NI 0 60	PE NUMBER AND TITLE 0605854A Pollution Prevention	ollution	Preventi	on		d 2	PROJECT M8PP
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M8PP Pollution Prevention - Acquisition Pollution Prevention	4059	10230	2907	2043	877	866	881	868	898 Continuing Continuing	Continuing

A. Mission Description and Justification: Project M8PP - Pollution Prevention - Acquisition Pollution Prevention: Develop and implement the Army Acquisition Issues directly affecting operational readiness of weapon systems and supporting facilities take top priority. Support is also provided for the Joint Group for Acquisition compliance with the Montreal Protocol, the Clean Air Act, the Pollution Prevention Act and Executive Order 12856 (and others). This program primarily funds test and Pollution Prevention to reduce requirements for hazardous materials and toxic chemicals used throughout the weapon system life cycle. The program supports Army evaluation of environmentally acceptable alternative materials and processes used in weapon system design, testing, production, maintenance, operation and support. Pollution Prevention.

FY 1996 Accomplishments:

- Toxicological Assessment of Alternative New Materials
 - Program Management and Oversight 300
- gniter Mix Testing 40
- **I&E** of Aviation Materials and Processes 200
- T&E of alternative Materials and Processes for Missile Production
- T&E of alternative Materials and Process for Tank Automotive and Armament Production 500
 - Implementation of Laser Stripping Processes for Helicopter Blades 150
 - Implementation of Ultrasonic Aqueous Cleaning Processes 200
 - Optimization of Aqueous Cleaning Processes 194
 - Development of Fire Safety Test Enclosure 500 1059 Total

FY 1997 Planned Program:

- Toxicological Assessment of Alternative New Materials
- Program Management and Oversight 300
- T&E of Alternative Materials and Process Related to Paint Coating and Stripping Processes, Engine Oil Life Extension and Propylene Glycol Antifreeze

 - T&E of Aviation Materials and Processes (Non-Chromate Processes)
 - T&E of alternative Materials and Processes for Missile Production (Powder Coating Processes and Alternative Fuels) 300 610 250
 - Implementation of Laser Stripping Processes for Helicopter Components

Project M8PP

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Exhibit R-2 (PE 0605854A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY		PE NUMBER AND TITLE	PROJECT
6 - Management Support	ent Support	0605854A Pollution Prevention	M8PP
FY 1997 Plannec	G.		
1848	1 T&E for Alternative Battery Production		
450		80	
125	T&E related to Soldier System products		
• 200	,		
1281			
• 250	Joint Group for Acquisition Pollution Prevention (JG-APP)		
• 1476	Implementation of Alternative Processes at	als and Ammunition	
• 250	Small Business Innovation Research/Small	Business Technology Transfer (SBIR/STTR) Programs.	
Total 10230			
EV 1008 Planned Program:	Dengram		
307	Toyloological Accessment of Alternative New Materials		
350			
450		unition (test procedures traces commonstrice confiner	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
350		inction (test procedures, tracer composition, scaning and effect from the modes coating and alternative field)	Odulig
250	-	Changet (hofferies)	
057	•	i roddonion und Support (Satistics)	
27	Test and Evaluation related to Coldier Syst	of test procedures.	
220			
93.			
	Joint Group for Acquisition Pollution Prevention		
Total 2907			
EV 1000 Diamod Description	Description of the second of t		
702 203	Tourselesies Assessment of Alternative New Materials		
250	Program Management and Oversight		
350		uction	
• 250		tion	
100		Support	
• 75		9.	
75	Test and Evaluation related to Soldier System		
740	Process Support in the Industrial Base		
Total 2043			
Project M8PP	Pa	Page 9 of 10 Pages	Exhibit R-2 (PE 0605854A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICATIC	N SHEET	(R-2 Exhik	oit)	DATE Fabrilary 1997
BUDGET ACTIVITY 6 - Management Support		PE NUMBER AND TITLE 0605854A Pollu	ID TITLE Pollution Prevention	revention	PROJECT NISPP
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 4163 4279	FY 1997 10449 10230	FY 1998 2892	FY 1999 2015	
Adjustifients to Appropriated Value FY 1998 President's Budget Request	-220 4059	10230	2907	2043	
		·			
Project M8PP	Pag	Page 10 of 10 Pages		Ш	Exhibit R-2 (PE 0605854A)
		10.45			11,170

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (F	1-2 Exhi	bit)		DATE	Fobrana 1997	700
BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research Development, Testing & Evaluation	TITLE Invironm nt, Testin	ental Co g & Eval	mpliance	- Resea	rch,	166
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	65985	54251	51378	47604	44157	42716	43610	44607	Continuing	Continuing
M0VV Environmental Compliance - AMC Test Ranges	39579	34126	36655	34849	31446	30831	31477	32213	Continuing	Continuing
M1VV Environmental Compliance - AMC Major Subordinate Commands/Laboratories	20371	13680	12727	10733	11076	10033	10246	10466	Continuing	Continuing
M4VV Environmental Compliance - Corps of Engineers	1897	1469	0	0	0	0	0	0	Continuing	Continuing
M5VV Environmental Compliance - USASSDC	4138	4976	1996	2022	1635	1852	1887	1928	Continuing	Continuing

control of current defense operations and disposal of hazardous waste incident to defense operations funded by the RDTE appropriation. Army defines environmental effort as: Class O - projects needed to cover essential administrative, personnel, and other costs required to manage environmental activities and monitor environmental conditions permits and licensing fees; environmental training, plans and studies; and environmental monitoring and audits. Funds cost of complying with Federal Facility Compliance associated with compliance. Class I - support compliance with legally binding agreements or judgments under applicable federal, state, local or host nation environmental including waste treatment and disposal; radon abatement; repair and clean up of underground storage tank hazards; management of hazardous waste storage and disposal; Mission Description and Budget Item Justification: This program ensures that resources are available to fund legally mandated environmental compliance activities at law; correct deficiencies cited in an inspection or notice of violation by a regulatory agency, or host nation equivalent; correct deficiencies where a statutory or regulatory deadline has passed; Class II - projects required to comply with an established standard, and deadline for compliance is in the future; Class III - salaries and training for environmental personnel and projects required to maintain/improve environmental quality, but where non-compliance is not imminent. Includes effort directed toward compliance or Defense Environmental Restoration Account (DERA) funded environmental restoration. In summary, this program provides for environmental quality compliance efforts at RDTE facilities). It finances environmental staff salaries; minor construction, repair and upgrade of facilities to meet environmental standards, Agreements (FFCA) and other environmental agreements, and correcting notices of violation. It does not finance construction or repairs unrelated to environmental U.S. Army RDTE installations, laboratories and test ranges. (No Operation and Maintenance, Army (OMA) appropriation funds are budgeted for environmental support of installations or operations required for general research and development use and therefore is appropriate for Budget Activity 6.

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Exhibit R-2 (PE 0605856A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	266
BUDGET ACTIVITY 6 - Managem	BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	IITLE Invironm It, Testin	ental Col g & Evalt	mpliance uation	- Reseal		PROJECT MOVV
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
MOVV Environment	Environmental Compliance - AMC Test Ranges	39579	34126	36655	34849	31446	30831	31477	32213	Continuing	Continuing
A. Mission Descr for legally mandat (DPG), UT; and W	A. Mission Description and Justification: Project M0VV - Environmental Compliance - AMC Test Ranges: Resources in the project ensure an adequate level of funding for legally mandated environmental compliance requirements at Yuma Proving Ground (YPG), AZ; Aberdeen Proving Ground (APG), MD; Dugway Proving Ground (DPG), UT; and White Sands Missile Range (WSMR), NM. These operations are critical to the infrastructure of the Army testing program.	I MOVV - En puirements at IR), NM. The	vironmental Yuma Provi sse operation	Compliance ing Ground (ns are critica	YPG), AZ; I to the infra	t Ranges: Re Aberdeen Pr structure of t	esources in to oving Grounthe Army tes	he project er nd (APG), M sting progran	isure an adeo ID; Dugway n.	quate level or Proving Gr	of funding ound
FY 1996 Accomplishments: • 39579 Funded Environ	lishments: 9 Funded Class I, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, Environmental Impact Statements, asbestos disposal, wastewater compliance, emissions inventory and permits, responses to Notices of Deficiency MOD) for hazardous waste management negative. Also finded hazardous waste disposal and program management	other "Must]	dund" enviras disposal, v	onmental corvastewater c	mpliance pro ompliance, e	grams such a missions inv	as undergrou entory and p	and storage t permits, resp	ank removal onses to Not	//remediation tices.of Defi	n, ciency
Total 39579		9,,,,,,					id program	war garage			
FY 1997 Planned Program: • 33494 Fund C Environ	Program: 4 Fund Class O, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediati Environmental Impact Statement, asbestos disposal, wastewater compliance, expansion of solid waste landfill, backflow prevention program and	I, and other '	Must Fund' disposal, w	environmer astewater co	"Must Fund" environmental compliance programs such as underground storage tank removal/remediation, s disposal, wastewater compliance, expansion of solid waste landfill, backflow prevention program and Also finds hazardons waste disposal and program management	nce programs pansion of s	s such as unc olid waste la	derground st indfill, backi	orage tank re flow prevent	emoval/reme tion program	ediation, and
• 632 Total 34126		esearch/Smal	Business T	echnology 7	Business Technology Transfer (SBIR/STTR) Programs.	R/STTR) Pr	ograms,				
FY 1998 Planned Program: • 36655 Fund C Enviror closure Total 36655	Program: 5 Fund Class O, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, Environmental Impact Statement, asbestos disposal, wastewater compliance, expansion of solid waste landfill, backflow prevention program and closure of solid waste management units. Also funds hazardous waste disposal and program management.	II, and other ' ient, asbestos ement units.	Must Fund' disposal, w Also funds l	environmer astewater co nazardous w	Must Fund" environmental compliance programs such as under disposal, wastewater compliance, expansion of solid waste land Also funds hazardous waste disposal and program management.	nce programs pansion of s and progran	s such as unc olid waste le n manageme	derground st andfill, backi ant.	orage tank re flow prevent	emoval/remc tion program	ediation, and
FY 1999 Planned Program: • 34849 Fund C Environ closure Total 34849	 Program: Fund Class O, Class II, and other "Must Fund" environmental compliance programs such as underground storage tank removal/remediation, Environmental Impact Statement, asbestos disposal, wastewater compliance, expansion of solid waste landfill, backflow prevention program and closure of solid waste management units. Also funds hazardous waste disposal and program management. 	I, and other ' ient, asbestos ement units.	'Must Fund' disposal, w Also funds l	environmer astewater co nazardous w	"Must Fund" environmental compliance programs such as under disposal, wastewater compliance, expansion of solid waste land Also funds hazardous waste disposal and program management.	nce programs pansion of s and progran	s such as unc olid waste la n manageme	derground st andfill, backi ant.	orage tank re flow prevent	emoval/remc tion program	ediation, and
Project M0VV				Page 2 of 8 Pages	8 Pages			Exhibi	Exhibit R-2 (PE 0605856A)	(605856A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATIO	N SHEET	(R-2 Exhib	it)	DATE February 1997	y 1997
вирсет АстіVіту 6 - Management and Support		PE NUMBER AND TITLE 0605856A Envir Development, T	id тіт <u>ге</u> Environme ent, Testing	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	e - Research,	PROJECT MOVV
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 38657 39693	FY 1997 34856 34126	FY 1998 34215	FY 1999 31742		
Adjustments to Appropriated Value FY 1998 President's Budget Request	-114 39579	34126	36655	34849		
Project M0VV	$Pa_{\mathcal{B}}$	Page 3 of 8 Pages		Exhi	Exhibit R-2 (PE 0605856A)	3A)
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (F	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fol	February 1997	67
вирает Астімту 6 - Managem	вирдет Астіvіту 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605856A Envis Development, T	TITLE Environm ot, Testin	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	mpliance uation	- Resea		PROJECT M1VV
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1VV Environmen Subordinate	Environmental Compliance - AMC Major Subordinate Commands/Laboratories	20371	13680	12727	10733	11076	10033	10246	10466	Continuing	Continuing
A. Mission Desc for legally manda Center (ARDEC), Natick, MA.	A. Mission Description and Justification: Project M1VV - Environmental Compliance - AMC MSC/LAB: Resources in this project ensure an adequate level of funding for legally mandated environmental compliance requirements at Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, Dover, NJ; and Soldier Systems Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), Natick, MA.	MIVV - En uirements at d Soldier Sys	vironmental Army Reses tems Comm	Compliance irch Laborate and (SSCON	ory (ARL), AM, formerly	C/LAB: Res Adelphi, MD , Natick Res	sources in the symment of the carch, Devel	Is project en: Research, D	sure an adeq evelopment Engineering	uate level of and Enginee ; Center (NR	funding ring DEC),
FY 1996 Accomplishments: • 20371 Funded hazard installa	blishments: I Funded Class I, Class II, and other environmental programs such as the conversion of the central boiler house to natural gas and the upgrade of the hazardous waste storage building at SSCOM; hazardous waste closures, rehabilitation of sanitary sewer west, upgrade lift stations and complete installation of reduced emission burner at powerhouse at ARDEC; and environmental program management and administration and beginning.	other environ ling at SSCO	mental prog M; hazardo	rams such as us waste clos	s the conversures, rehabi	sion of the ce litation of sa nental progra	entral boiler initary sewer am managen	nouse to nate west, upgra	rral gas and de lift station	the upgrade	of the ete
Total 20371		pgrade at AR	L. Funded	emaining co	mpliance re	quirements s	Funded remaining compliance requirements such as hazardous waste disposal and program	dous waste c	disposal and	program	5
FY 1997 Planned Program: 13588 Fund C require	Program: 8 Fund Class I, Class II, and other environmental programs, such as, drinking water cross-connection program and compliance with sewage prevention requirement at ARDEC; upgrade of fume hood exhaust controls and final phase of underground storage tank upgrade program at SSCOM; final phase of underground storage tank ungrade program at API. Final compliance of underground storage tank ungrade program at API.	ler environmade of fume beneate program	ental programood exhaust	ns, such as, t controls and	drinking wa d final phase	ter cross-con	nection prog	ram and contant upgrade	npliance with	h sewage pre	vention al phase
• 92 Total 13680	management. 92 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	search/Small	Business T	echnology T	ransfer (SBI	an ar Arxe. Tund temaning compnance requirements si Business Technology Transfer (SBIR/STTR) Programs.	ograms.	is nazardous	waste dispo	sal and prog	am
FY 1998 Planned Program: 12727 Fund C require	Program: 7 Fund Class I, Class II, and other environmental programs, such as, drinking water cross-connection program and compliance with sewage prevention requirement at ARDEC; upgrade of fume hood exhaust controls and final phase of underground storage tank upgrade program at SSCOM; final phase	er environme ide of fume h	intal prograi	ns, such as, c	drinking wat 1 final phase	er cross-con of undergro	nection prog und storage	ram and con tank upgrade	npliance with program at	h sewage pre SSCOM; fir	vention al phase
T0701	of underground storage tank upgrade program at ARL. Fund remaining compliance requirements such as hazardous waste disposal and program management.	pgrade progi	am at AKL.	Fund remai	ning compii	ance require	ments such a	s hazardous	waste dispo	sal and progi	am

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Total

Project M1VV



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET	(R-2 Exhibi	t)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605856A Envis	ND TITLE Environmer Ient, Testing	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	e - Research,	PROJECT M1VV
99 Pla	programs, such as, drinking exhaust controls and final ph it ARL. Fund remaining con	water cross-conne hase of undergrour npliance requirem	ction program and c nd storage tank upgra ents such as hazardo	ompliance with sewag ide program at SSCON us waste disposal and	e prevention M; final phase program
Total					
B. Project Change Summary FY 1997 President's Budget Appropriated Value	EY 1996 FY 1997 20900 13972 21481 13680	FY 1998 12709	FY 1999 10698		
FY 1998 President's Budget Request	20371 13680	12727	10733		
Project M1VV	Page 5 of 8 Pages		Exhib	Exhibit R-2 (PE 0605856A)	7
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe!	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605856A Environmental Complian Development, Testing & Evaluation	пте invironm it, Testin	ental Co g & Eval	E NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	- Reseal		PROJECT M4VV
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M4VV Environmental Compliance - Corps of Engineers	1897	1469	0	0	0	0	0	0	Continuing	0 Continuing Continuing

A. Mission Description and Justification: Project M4VV-Environmental Compliance - Corps of Engineers: Resources in this project are for an industry cost-share demonstration of a 3000 HP low emission natural gas boiler. The funds went to Construction Engineering Research Laboratory (CERL) for demonstration at Watervliet Army Arsenal, New York.

FY 1996 Accomplishments:

Development of an industry cost-shared demonstration of a 3000 HP low emission natural gas boiler.

Total 1897

FY 1997 Planned Program:

Development of an industry cost-shared demonstration of a 3000 HP low emission natural gas boiler. 1433

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 36

Total 1469

FY 1998 Planned Program: Program not funded in FY 98.

FY 1999 Planned Program: Program not funded in FY 99.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	0	0	0	0
Appropriated Value	2000	1469		
Adjustments to Appropriated Value	-103			
FY 1998 President's Budget Request	1897	1469	0	0

Change Summary Explanation:

Funding: FY 1996 Congressional increase provided for the development of a natural gas boiler.

FY 1997 Congressional increase provided for the development of a natural gas boiler.

Project M4VV

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE		100
вирдет Астіліту 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605856A Envil Development, T	PENUMBER AND TITLE 0605856A Environmental Complian Development, Testing & Evaluation	ental Co g & Eval	De NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	- Resea	≧	PROJECT M5VV
J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M5VV Environmental	Environmental Compliance - USASSDC	4138	4976	1996	2022	1635	1852	1887	1928	Continuing	Continuing
A. Mission Descrit	A. Mission Description and Justification: Project M5VV - Environmental Compliance - U.S. Army Space and Strategic Defense Command (USASSDC): Resources in this project ensure an adequate level of funding for legally mandated environmental compliance requirements at the USASSDC.	M5VV - En egally mand	vironmental ated environ	Compliance mental com	e - U.S. Arm pliance requi	y Space and rements at th	Strategic Do	efense Comn C.	nand (USAS	SSDC): Res	ources in
FY 1996 Accomplishments: • 4138 Funded quarter	shments: Funded environmental compliance programs such as testing for hazardous materials, shipment of hazardous wastes, environmental staff training, quarterly testing of notable water, clean un finel/oil contamination, environmental chandrals downwatering.	ance program	ns such as te fuel/oil con	sting for haz	zardous mate	rials, shipme	ent of hazarc	lous wastes,	environmen	ıtal staff trai	ning,
Total 4138	removal of Polychlorinated Biphenyls (PCBs), removal and disposal of asbestos, water quality, etc.	phenyls (PC)	Bs), remova	and dispose	al of asbestos	a standards s, water qual	documentat ity, etc.	ion, environi	mental awar	eness traini	ng,
FY 1997 Planned Program: • 4854 Fund en	rogram: Fund environmental compliance programs such as PCB removal, testing for hazardous materials, shipment and disposal of hazardous wastes, environmental staff training, water quality, clean up fuel/oil contamination, underground storage tank compliance asharts.	e programs	such as PCE clean up fue	removal, te	sting for haz	ardous mate	rials, shipme	ent and dispo	osal of hazar	dous waste	,
• 122 Total 4976	mitigation monitoring, etc. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	earch/Small	Business Te	chnology Ti	ransfer (SBII	R/STTR) Pro	grams.	amparance, as	Socstos relific	oval and sni	pment,
FY 1998 Planned Program: • 1996 Fund er environ	rogram: Fund environmental compliance programs environmental staff training, water quality.		such as PCB clean up fue	removal, te	sting for haz	ardous mater	rials, shipme	such as PCB removal, testing for hazardous materials, shipment and disposal of hazardous wastes, clean up fuel/oil contamination, underground storage tank compliance asherter removel and disposal	sal of hazar	dous wastes	
Total 1996	mitigation monitoring, etc.							mpriance, as	DISCOSTORIOS TOTALOS	vai allu sili	pinent,
FY 1999 Planned Program: • 2022 Fund er environ	rogram: Fund environmental compliance programs environmental staff training, water quality,		such as PCB clean up fue	removal, tes I/oil contam	sting for hazaination, unde	ardous mater reround stor	ials, shipme age tank co	such as PCB removal, testing for hazardous materials, shipment and disposal of hazardous wastes, clean up fuel/oil contamination, underground storage tank compliance ashestos removal and chimment	isal of hazard	dous wastes	,
Total 2022	mitigation monitoring, etc.)	0			ing and and	andur,
Project M5VV				Page 7 of 8 Pages	Pages			Exhibit	Exhibit R-2 (PE 0605856A)	305856A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhib	it)	DATE February 1997	, 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605856A Envir Development, To	ID TITLE Environme ent, Testing	PE NUMBER AND TITLE 0605856A Environmental Compliance - Research, Development, Testing & Evaluation	e - Research,	PROJECT M5VV
B. Project Change Summary FY 1996 FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value -789 FY 1998 President's Budget Request	1996 FY 1997 4792 5083 4927 4976 -789 4976 4138 4976	FY 1998 2976 1996	FY 1999 2607 2022		
Change Summary Explanation: Funding: FY 1996 decrease (-789) reprogrammed for higher priority requirements. FY 1998 (-980) reduction realigned to higher priority requirements. FY 1999 (-585) reduction realigned to higher priority requirements.	y requirements. iirements. iirements.				
Project M5VV	Page 8 of 8 Pages		Exhib	Exhibit R-2 (PE 0605856A)	₹
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BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605876A Mino Development, T	TITLE Minor Co nt, Testin	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	n - Rese uation	arch,		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6035	4229	4393	4537	4481	4533	4618	4714	Continuing	Continuing
M0WW Minor Construction - Test Ranges	3874	2708	2746	2807	2875	2941	3000	3065	Continuing	Continuing
M1WW Minor Construction - AMC Subordinate Commands and Laboratories	1601	1040	1133	1216	1115	1109	1128	1151	Continuing	Continuing
M4WW Minor Construction - Corps of Engineers	260	481	514	514	491	483	490	498	Continuing	Continuing

extension, alteration, conversion, relocation or replacement of an existing real property facility. Includes design costs directly associated with accomplishing a designated project undertaking. These projects substantially prolong the useful life of the facility and are all actually facility investments. Includes effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6. Mission Description and Budget Item Justification: This program element finances activities and functions necessary to provide facility related minor construction for U.S. Army RDTE installations, laboratories and test ranges. Minor construction includes: erection, installation, or assembly of a new real property facility; expansion,

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (F	2-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 6 - Managem	вирдет АСТІVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605876A Mino Development, T	TITLE Minor Cor It, Testin	DE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	n - Rese			PROJECT MOWW
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
MOWW Minor Const.	MOWW Minor Construction - Test Ranges	3874	2708	2746	2807	2875	2941	3000	3065	Continuing	Continuing
A. Mission Desci	A. Mission Description and Justification: Finances RDTE minor construction projects for U.S. Army Materiel Command (AMC) technical test ranges assigned to Test	ses RDTE min	or construc	tion projects	for U.S. An	my Materiel	Command (4	AMC) techn	ical test rang	ges assignec	to Test
and Evaluation Co NM. In addition, over approximatel	and Evaluation Command (TECOM), i.e., Yuma Proving Ground, AZ; Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; and White Sands Missile Range, NM. In addition, project provides common service host support for over 100 tenants and satellites located on these four TECOM ranges. Facility assets managed include over approximately 4 million acres of land, over 24 million square feet of building space, 3 thousand miles of roads, and 2 thousand miles of utility lines.	roving Groun host support million squa	d, AZ; Abel for over 100 re feet of bu	rdeen Provin) tenants and ilding space	Ig Ground, I satellites lo , 3 thousand	AD; Dugway cated on these miles of road	AZ; Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; and White Sands Missile Range, or over 100 tenants and satellites located on these four TECOM ranges. Facility assets managed include feet of building space, 3 thousand miles of roads, and 2 thousand miles of utility lines.	ound, UT; a DM ranges. usand miles	nd White Sar Facility assert	nds Missile ets managec 1es.	Range, include
FY 1996 Accomplishments:	lishments:										
0861	9 Funded minor construction projects at Aberdeen Proving Ground, MD	rojects at Abe	rdeen Provi	ng Ground,	MD					-	
457		rojects at Dug	way Provin	g Ground, U	T						
850	 funded minor construction projects at White Sands Missile Range, NM Funded minor construction projects at Yuma Proving Ground. AZ 	rojects at Wh	ite Sands Mi	Sands Missile Range, Proving Ground, AZ,	Σχ						
Total 3874		r	D								
FY 1997 Planned Program:	Program:										
• 1374	4 Fund minor construction projects at Aberdeen Proving Ground, MD	ects at Aberd	een Proving	Ground, MI	Q						
. 291		ects at Dugw	ay Proving	Ground, UT							
099		ects at White	Sands Miss	ile Range, N	M						
317	7 Fund minor construction projects at Yuma Froving Ground, AZ Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	ects at Yuma esearch/Smal	Proving Gr	ound, AZ echnology T	ransfer (SB)	(R/STTR) Pro	oorams				
Total 2708				6			0				
FY 1998 Planned Program:	Program:										
• 1429	9 Fund minor construction projects at Aberdeen Proving Ground, MD	ects at Aberd	een Proving	Ground, MI	0						
301		ects at Dugw	ay Proving	Ground, UT							
989		ects at White	Sands Miss.	ile Range, N	M						
330	0 Fund minor construction projects at Yuma Proving Ground, AZ	ects at Yuma	Proving Gre	ZW ,punc							
Total 2746	9										
Project M0WW				Page 2 of 7 Pages	7 Pages			Exhibi	Exhibit R-2 (PE 0605876A)	(605876A)	
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605876A Mino Development, T	ND TITLE Minor Cons nent, Testing	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation		PROJECT
 FY 1999 Planned Program: 1459 Fund minor construction projects at Aberdeen Proving Ground, MD 309 Fund minor construction projects at Dugway Proving Ground, UT 702 Fund minor construction projects at White Sands Missile Range, NM 337 Fund minor construction projects at Yuma Proving Ground, AZ Total 2807 	ring Ground, MD ng Ground, UT fissile Range, NM Ground, AZ				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 FY 1997 3450 2766 3548 2708 +326 3874 2708	EY 1998 2731 2746	FY 1999 2781 2807		
Change Summary Explanation: Funding: FY 1996 increased (+326) for barracks repairs.	barracks repairs.				
Project M0WW	Page 3 of 7 Pages 1256		Exh	Exhibit R-2 (PE 0605876A)	4) Item 130

BUDGET ACTIVITY						Le	February 1997	266
6 - Management and Support	PE NU 060 Dev	PE NUMBER AND TITLE 0605876A Mino Development, T	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	structio g & Eval	n - Resea Jation	arch,		PROJECT M1WW
COST (In Thousands) FY 1996 FY 1997 F	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1WW Minor Construction - AMC Subordinate 1601 1040 Commands and Laboratories	1133	1216	1115	1109	1128	1151	Continuing	Continuing

common service host support to 36 tenants located at these installations. Facilities managed include 8,996 acres of land and 6.4 million square feet of building space.

FY 1996 Accomplishments:

- Funded minor construction projects at ARDEC, Picatinny Arsenal, NJ 186
 - Funded minor construction projects at ARL, Adelphi, MD Funded minor construction projects at SSCOM, Natick, MA. 222 398 1601
- Total

FY 1997 Planned Program:

- Fund minor construction projects at ARDEC, Picatinny Arsenal, NJ 815
 - Fund minor construction projects at ARL, Adelphi, MD 147
 - Fund minor construction projects at SSCOM, Natick, MA.
 - 1040 Total

FY 1998 Planned Program:

- Fund minor construction projects at ARDEC, Picatinny Arsenal, NJ 891
 - Fund minor construction projects at ARL, Adelphi, MD 158 84 1133
 - Fund minor construction projects at SSCOM, Natick, MA.

Project M1WW

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET	(R-2 Exhibit)	DATE Februs	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605876A Mino Development, T	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation		PROJECT M1WW
 FY 1999 Planned Program: 718 Fund minor construction projects at ARDEC, Picatinny Arsenal, NJ 315 Fund minor construction projects at ARL, Adelphi, MD 183 Fund minor construction projects at SSCOM, Natick, MA. Total 1216	ny Arsenal, NJ AD , MA.			
B. Project Change Summary FY 1996 FY 1997 President's Budget Appropriated Value Advinstments to Appropriated Value	1996 FY 1997 1271 1062 1305 1040 +296	FY 1998 FY 1118	FV 1999 1197	
st	1601 1040	1133	1216	
Change Summary Explanation: Funding - FY 1996 increased (+296) for employees' quality of life and work environment improvements. Project M1WW Page 5 of 7 Pages Project M1WW Page 5 of 7 Pages	nployees' quality of life	e and work environment i	mprovements. Exhibit R-2 (PE 0605876A)	876A)
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	76
BUDGET ACTIVITY 6 - Management and Support	nt and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605876A Mino Development, T	TITLE Minor Col nt, Testin	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	n - Reseguation			PROJECT M4WW
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M4WW Minor Construc	M4WW Minor Construction - Corps of Engineers	560	481	514	514	491	483	490	498	Continuing	Continuing
A. Mission Descrip Experiment Station (Alexandria, VA and	A. Mission Description and Justification: Project finances those minor construction projects for U.S. Army Corps of Engineers RDTE laboratories located at Wa Experiment Station (WES), Vicksburg, MS; Cold Regions Research and Engineering Laboratory (CRREL), Hanover, NH; Topographic Engineering Center (TEC), Alexandria, VA and Construction Engineering Research Laboratory (CERL), Champaign, IL.	finances thosegions Resea	se minor cor rch and Eng ory (CERL)	istruction princering Lal	ojects for U ooratory (CF n, IL.	.S. Army Co (REL), Hanc	minor construction projects for U.S. Army Corps of Engineers RDTE laboratories located at Waterways and Engineering Laboratory (CRREL), Hanover, NH; Topographic Engineering Center (TEC), ry (CERL), Champaign, IL.	eers RDTE I pographic E	laboratories l ngineering (located at W Center (TEC)	iterways ,
FY 1996 Accomplishments:	hments: Funded minor construction projects at CRREL, Hanover, NH Funded minor construction projects at WES, Vicksburg, MS	ojects at CRF ojects at WE	UEL, Hanov S, Vicksburg	er, NH 5, MS							
FY 1997 Planned Program:	ogram: Fund minor construction projects at TEC, Alexandria, VA Fund minor construction projects at CRREL, Hanover, NH Fund minor construction projects at WES, Vicksburg, MS Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	ects at TEC, / ects at CRRE ects at WES, search/Small	Mexandria, VA L, Hanover, NF Vicksburg, MS Business Tech	VA NH MS echnology T	ransfer (SB)	(R/STTR) Pr	ograms.				
FY 1998 Planned Program:	ogram: Fund minor construction projects at TEC, Alexandria, VA Fund minor construction projects at CRREL, Hanover, NH Fund minor construction projects at WES, Vicksburg, MS	ects at TEC, A ects at CRRE) ects at WES,	Mexandria, L. Hanover, Vicksburg, l	VA NH MS							
FY 1999 Planned Program:	ogram: Fund minor construction projects at TEC, Alexandria, VA Fund minor construction projects at CRREL, Hanover, NH Fund minor construction projects at WES, Vicksburg, MS	ects at TEC, tects at CRREI ects at WES, '	Alexandria, ''., Hanover, Vicksburg, I'	VA NH AS							
Project M4WW				Page 6 of 7 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0605876A)	605876A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATION	ON SHEET	(R-2 Exhib	it)	DATE	February 1997	1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605876A Mino Development, To	PE NUMBER AND TITLE 0605876A Minor Construction - Research, Development, Testing & Evaluation	struction - R. & Evaluatio	esearch, n		PROJECT M4WW
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 626 644 -84	FY 1997 491 481	FY 1998 484	<u>FY 1999</u> 479			
FY 1998 President's Budget Request	260	481	514	514			
Change Summary Explanation: Funding: FY 1996 decreased (-34) for Congressional reductions and rescissions and (\$-50K) reprogrammed to higher priority requirements.	-34) for Congressi	ional reductions a	nd rescissions an	d (\$-50K) reprog	rammed to hi	gher priority n	equirements.
Project M4WW	Pay	Page 7 of 7 Pages		Û	xhibit R-2 (P	Exhibit R-2 (PE 0605876A)	

6 - Management and Support PE NUMBER AND TITLE COST (In Thousands) FY 1996 FY 1997 FY 1999 FY 1999 FY 1999 FY 2001 FY 2003 FY 200	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SH	HEET (R	-2 Exhi	oit)		DATE Fel	February 1997	197
FY 1996 FY 1996 FY 1998 FY 1999 FY 2000 FY 2001 FY 2002 FY 2003 FY 2003 FY 2003 FY 2002 FY 2002 FY 2002 FY 2002 FY 2003 FY 2003 <t< th=""><th>BUDGET ACTIVITY 6 - Management and Support</th><th></th><th></th><th>PE NU 060 Dev</th><th>JMBER AND 1 5878A N</th><th>пте laintenar it, Testin</th><th>ice and F g & Evali</th><th>Repair - F uation</th><th>Research</th><th>í</th><th></th></t<>	BUDGET ACTIVITY 6 - Management and Support			PE NU 060 Dev	JMBER AND 1 5878A N	пте laintenar it, Testin	ice and F g & Evali	Repair - F uation	Research	í	
86907 68580 85119 74681 69861 67370 68643 65303 49797 60347 58714 54263 52482 53466 16866 15476 11243 11965 12140 11438 11663 f 4738 3307 3557 4002 3458 3450 3514	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
65303 49797 60347 58714 54263 52482 53466 5 16866 15476 11243 11965 12140 11438 11663 1 f 4738 3307 3557 4002 3458 3450 3514	Total Program Element (PE) Cost	86907	68580	85119	74681	69861	67370	68643	70072	Continuing	Continuing
16866 15476 11243 11965 12140 11438 11663 1 4738 3307 3557 4002 3458 3450 3514	M0YY Maintenance and Repair - AMC Test Ranges	65303	49797	60347	58714	54263	52482	53466	54573	Continuing	Continuing
4738 3307 3557 4002 3458 3450 3514	M1YY Maintenance and Repair - AMC Subordinate Commands/Laboratories	16866	15476	11243	11965	12140	11438	11663	11921	Continuing	Continuing
	M4YY Maintenance and Repair - U.S. Army Corps of Engineers	4738	3307	3557	4002	3458	3450	3514	3578	Continuing	Continuing
M744 Modernization of Utilities 0 0 0 9972 0 0 0 0 0	M744 Modernization of Utilities	0	0	9972	0	0	0	0	0	0	0

annual recurring repair incurred by building trade shops, construction units, grounds and pavements units, machine shops and contracts. Funding also provide for modernization of utility systems. These projects substantially prolong the useful life of the facility, and are all actually facility investments. Includes effort directed toward Mission Description and Budget Item Justification: This program element finances activities and functions necessary for maintenance and repair of real property at U.S. Army RDTE installations, laboratories and test ranges. Maintenance and repair of real property includes applicable expenses of cyclic and preventive maintenance and support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE	February 1997	790
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	TITLE Naintenai nt, Testin	nce and I	Repair - F	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation		PROJECT
J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M0YY Maintenance a	MOYY Maintenance and Repair - AMC Test Ranges	65303	49797	60347	58714	54263	52482	53466	54573	Continuing	Continuing
A. Mission Descrip installations assigne White Sands Missile distribution systems,	A. Mission Description and Justification: This project finances the maintenance and repair for sustaining the infrastructure of the U.S. Army Materiel Command (AMC) installations assigned to the Test and Evaluation Command (TECOM), i.e. Aberdeen Proving Ground, MD; Dugway Proving Ground, Utah; Yuma Proving Ground, AZ and White Sands Missile Range, NM. Funding provides maintenance and repair to over 24 million square feet of facilities, 3 thousand miles of road, 1400 miles of electric distribution systems, and over 600 miles of water and sewage distribution systems.	oject finance mmand (TEC maintenance d sewage dis	s the mainte YOM), i.e. A and repair tribution sys	nance and re berdeen Pro to over 24 m	spair for sust ving Ground illion square	aining the in I, MD; Dugw e feet of facil	offrastructure vay Proving lities, 3 thou	of the U.S., Ground, Uta sand miles o	Army Materi ah; Yuma Pro of road, 1400	iel Comman oving Grour miles of ele	d (AMC) Id, AZ and ectric
FY 1996 Accomplishments:	Funded minimum operational maintenance requirement and \$12 million for repair projects at Aberdeen Proving Ground, MD. Funded minimum operational maintenance requirement and \$2 million for repair projects at Dugway Proving Ground, UT. Funded minimum operational maintenance requirement and \$5 million for repair projects at White Sands Missile Range, NM. Funded minimum operational maintenance requirement and \$4 million for repair projects at Yuma Proving Ground, AZ.	maintenance maintenance maintenance maintenance	requiremen requiremen requiremen requiremen	t and \$12 m. t and \$2 mil t and \$5 mil t and \$4 mill	illion for rep lion for repa lion for repa lion for repa	air projects ar ir projects at ir projects at ir projects at	at Aberdeen Dugway Pr White Sand Yuma Prov	Proving Gruoving Gruoving Grour Is Missile Raing Ground,	ound, MD. 1d, UT. ange, NM. AZ.		
FY 1997 Planned Program:	Fund minimum operational maintenance requirements at Aberdeen Proving Ground, MD. Fund minimum operational maintenance requirements at Dugway Proving Ground, UT. Fund minimum operational maintenance requirements at White Sands Missile Range, NM. Fund minimum operational maintenance requirements at Yuma Proving Ground, AZ. Funds Federal Energy Management projects. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) P.	aintenance re aintenance re aintenance re aintenance re ment project search/Small	quirements quirements quirements quirements quirements s.	at Aberdeen at Dugway F at White San at Yuma Pro	equirements at Aberdeen Proving Ground, MD. equirements at Dugway Proving Ground, UT. equirements at White Sands Missile Range, NM. equirements at Yuma Proving Ground, AZ. ts.	ound, MD. ind, UT. kange, NM. 1, AZ. R/STTR) Pro	ograms.				
FY 1998 Planned Program:	ogram: Fund minimum operational maintenance requirements and \$7 million for repair projects at Aberdeen Proving Ground, MD. Fund minimum operational maintenance requirements and \$1 million for repair projects at Dugway Proving Ground, UT. Fund minimum operational maintenance requirements and \$3 million for repair projects at White Sands Missile Range, NM. Fund minimum operational maintenance requirements and \$1 million for repair projects at Yuma Proving Ground, AZ.	uintenance re uintenance re uintenance re uintenance re	quirements (quirements (quirements z	and \$7 millic and \$1 millic and \$3 millic and \$1 millic	on for repair on for repair on for repair on for repair	projects at A projects at E projects at V	Nberdeen Pro Ougway Prov Vhite Sands Yuma Provir	oving Groun /ing Ground Missile Ran ig Ground, /	d, MD. , UT. ge, NM. 4Z.		**************************************
Project M0YY				Page 2 of 8 Pages	Pages			Exhibit	Exhibit R-2 (PE 0605878A)	305878A)	

RDT&E BUDGET ITEM JUST	JUSTIFICATION	N SHEET (IFICATION SHEET (R-2 Exhibit)	DATE Febru	February 1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	- Reseal	PROJECT MOYY
 FY 1999 Planned Program: 33456 Fund minimum operational maintenance requirements and \$3 million for repair projects at Aberdeen Proving Ground, MD. 5315 Fund minimum operational maintenance requirements and \$2 million for repair projects at Dugway Proving Ground, UT. 13354 Fund minimum operational maintenance requirements and \$2 million for repair projects at White Sands Missile Range, NM. 6589 Fund minimum operational maintenance requirements and \$.7 million for repair projects at Yuma Proving Ground, AZ. 	ance requirements and \$3 ance requirements and \$3 ance requirements and \$3 ance requirements and \$3	3 million for reps 6 million for rep 2 million for reps 7 million for rep	ir projects at Aberc air projects at Dugv ir projects at White air projects at Yum	deen Proving Ground, MD. way Proving Ground, UT. Sands Missile Range, NM. a Proving Ground, AZ.	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 70690 72670 -7367	FY 1997 50862 49797	FY 1998 52400	FY 1999 50793	
FY 1998 President's Budget Request	65303	49797	60347	58714	
 Change Summary Explanation: FY 1996 decrease of (-7367) reprogrammed to higher priority requirements. Funding: FY 1998 increase of (+7947) required for emergency and major repairs at the following installations: Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; White Sands Missile Range, NM; Yuma Proving Ground, AZ. FY 1999 increase of (+7921) required for emergency and major repairs at the following installations: Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; White Sands Missile Range, NM; Yuma Proving Ground, AZ. 	nmed to higher priority re for emergency and major sands Missile Range, NM for emergency and major ssile Range, NM; Yuma F	equirements. repairs at the folging at the folging repairs at the folginosing Ground,	lowing installation. Ground, AZ. Iowing installation: AZ.	s: Aberdeen Proving Ground, MD; s: Aberdeen Proving Ground, MD;	. Dugway
Project M0YY	Page	Page 3 of 8 Pages		Exhibit R-2 (PE 0605878A)	5878A)
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SE	HEET (R	-2 Exhi	bit)		DATE	Fobriton, 1007	107
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	דודנ flaintenar it, Testin	ice and F	PENUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	Research	l dary	PROJECT
ס	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1YY Maintenance and Repair Commands/Laboratories	Maintenance and Repair - AMC Subordinate Commands/Laboratories	16866	15476	11243	11965	12140	11438	11663	11921	Continuing	Continuing
A. Mission Descrip infrastructure for the Armament Research Development and En managed include 8,9	A. Mission Description and Justification: This project finances those maintenance and repair activities and functions necessary for maintaining and repairing infrastructure for the U.S. Army Materiel Command major subordinate command RDTE installations and laboratories, i.e., Army Research Laboratory, Adelphi, Maryland; Armament Research, Development and Engineering Center, Picatinny Arsenal, Dover, New Jersey; and Soldier System Command (SSCOM), formerly, Natick Research, Development and Engineering (RDE) Center, Natick, Massachusetts. Also provides common service host support to 36 tenants located at these installations. Facilities managed include 8,996 acres of land and 6.4 million square feet of building space with necessary utilities and road systems.	oject finance major subor Center, Pica c, Massachus square feet c	those main linate commininy Arsens etts. Also pr	tenance and nand RDTE il, Dover, Norovides com pace with ne	es those maintenance and repair activities and functions necrdinate command RDTE installations and laboratories, i.e., atinny Arsenal, Dover, New Jersey; and Soldier System Corsetts. Also provides common service host support to 36 ten of building space with necessary utilities and road systems.	ties and func and laboratc nd Soldier Sy host support ties and road	tions necess rries, i.e., Ar system Comn to 36 tenan systems.	sary for mair my Research nand (SSCO) ts located at	ntaining and a Laboratory M), former! these install	repairing 7, Adelphi, M y, Natick Ree lations. Facil	laryland; earch, ities
FY 1996 Accomplishments:	hments: Funded maintenance and repair projects at Funded maintenance and repair projects at Funded maintenance and repair projects at	ir projects at ir projects at r projects at	Picatinny Arsenal, NJ. Army Research Labor Soldier Systems Comn	senal, NJ. rch Laborat ems Comma	Picatinny Arsenal, NJ. Army Research Laboratory, Adelphi, MD. Soldier Systems Command, Natick, MA.	, MD. MA.					
FY 1997 Planned Program:	rogram: Funds maintenance and repair projects at Picatinny Arsenal, NJ. Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD. Funds maintenance and repair projects at Soldier Systems Command, Natick, MA. Small Business Innovation Research/Small Business Technology Transfer (SBIR/ST	projects at P projects at A projects at So search/Small	catinny Arsı rmy Researc ıldier Syster Business Te	enal, NJ. th Laborator ns Comman chnology Ti	icatinny Arsenal, NJ. amy Research Laboratory, Adelphi, MD. oldier Systems Command, Natick, MA. Business Technology Transfer (SBIR/STTR) Programs.	MD. 'A. XSTTR) Pro	grams.				W. C. Company
FY 1998 Planned Program:	rogram: Funds maintenance and repair projects at Picatinny Arsenal, NJ. Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD. Funds maintenance and repair projects at Soldier Systems Command, Natick, MA.	projects at Pi projects at Aı projects at Sc	catinny Arse my Researc ıldier Systen	enal, NJ. th Laborator ns Comman	y, Adelphi, I d, Natick, M	A.					
Project M1YY				Page 4 of 8 Pages	Pages			Exhibit	Exhibit R-2 (PE 0605878A)	305878A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATIO	N SHEET	(R-2 Exhib	it) DATE	E February 1997	1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605878A Main Development, T	D TITLE Maintenanc ent, Testing	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation		PROJECT M1YY
 FY 1999 Planned Program: 7326 Funds maintenance and repair projects at Picatinny Arsenal, NJ. 2690 Funds maintenance and repair projects at Army Research Laboratory, Adelphi, MD. 1949 Funds maintenance and repair projects at Soldier Systems Command, Natick, MA. Total 11965	rojects at Picatinny Arsenal rojects at Army Research L. rojects at Soldier Systems C	, NJ. aboratory, Adelp Command, Natick	hi, MD. ., MA.			
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 17644 18140	FY 1997 11807 15476	FY 1998 11964	FY 1999 13548		
FY 1998 President's Budget Request	16866	15476	11243	11965		
Change Summary Explanation: Funding: FY 1999 decrease of (-1583) realigned to higher priority requirements. Project MIYY Page 5 of 8 Pages	rease of (-1583) realigned $P_{m{a}}$	ed to higher priority. Page 5 of 8 Pages	requirements.	Exhibit R-2	Exhibit R-2 (PE 0605878A)	
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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FA	February 1997	26
BUDGET ACTIVITY 6 - Managen	вирсет астімту 6 - Management and Support			PE N 06(De	PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation	nce and I g & Eval	Repair - F uation	Research		PROJECT M4YY
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M4YY Maintenance Engineers	Maintenance and Repair - U.S. Army Corps of Engineers	4738	3307	3557	4002	3458	3450	3514	3578	Continuing	Continuing
A. Mission Desc infrastructure for	A. Mission Description and Justification: This project finances those maintenance and repair activities and functions necessary for maintaining and repairing infrastructure for the U.S. Army Corps of Engineers RDTE laboratories located at Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research and	oject finance RDTE labo	s those main ratories locat	tenance and ed at Water	repair activ	ities and fun ment Station	ctions necess (WES), Vic	sary for mair ksburg, MS;	ntaining and Cold Regio	repairing ons Research	and
Alexandria, VA.	Engineering Laboratory (CRNEL), manover, 1911; Construction Engineering Research Laboratory (CERL), Champaign, IL and Topographic Engineering Center (TEC), Alexandria, VA.	onstruction r	Sngineering	Kesearch La	boratory (CI	ERL), Chamj	paign, IL an	d Topograph	ic Engineeri	ing Center (T	EC),
FY 1996 Accomplishments:	olishments:										
965		ir projects at	CERL, Chai	npaign, IL.							
2235	 Funded maintenance and repair projects at CRREL, Hanover, NH. Funded maintenance and renair projects at TFC Alaxandria VA 	ir projects at ir projects at	CRREL, Ha	nover, NH.							
917		ir projects at	WES, Vicksburg, MS.	burg, MS.							
Total 4738				5							
FY 1997 Planned Program:	Program:										
929		projects at Cl	ERL, Champ	aign, IL.							
1550		projects at Cl	REL, Hano	ver, NH.							
439	9 Fund maintenance and repair projects at TEC, Alexandria, VA. Fund maintenance and repair projects at WFS Vickshurg MS.	projects at TI projects at W	3C, Alexandi FS Vickshu	ria, VA.							
Total 3307			600	, 63, 1415;							100
FY 1998 Planned Program:	Program:										
• 709	9 Fund maintenance and repair projects at CERL, Champaign, IL.	rojects at CI	SRL, Champ	aign, IL.							
1708		rojects at CI	REL, Hano	ver, NH.							
• 467		rojects at TE	3C, Alexandi	ia, VA.							
		rojects at W	ES, Vicksbu	rg, MS.					٠		
Total 3557	7										
Duning MANNY				,	ļ						
Project M4 x x				Page 6 of 8 Pages	' Pages			Exhibit	Exhibit R-2 (PE 0605878A)	305878A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET	(R-2 Exhibit	DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605878A Main Development, T	PE NUMBER AND TITLE 0605878A Maintenance and Repair Development, Testing & Evaluation	- Reseal	PROJECT M4YY
 FY 1999 Planned Program: 796 Fund maintenance and repair projects at CERL, Champaign, IL. 1912 Fund maintenance and repair projects at CRREL, Hanover, NH. 528 Fund maintenance and repair projects at TEC, Alexandria, VA. 766 Fund maintenance and repair projects at WES, Vicksburg, MS. Total 4002 	mpaign, IL. anover, NH. andria, VA. sburg, MS.			
B. Project Change Summary FY 1996 FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value -148	1996 FY 1997 4755 3378 4886 3307 -148	FY 1998 3543	FY 1999 3983	
##A	4738 3307	3557	4002	
Project M4YY	Page 7 of 8 Pages		Exhibit R-2 (PE 0605878A)	05878A)
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RDT&E BUDGET ITEM JUS	LEM JU		TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605878A Main Development, T	те number and тiтLe 0605878A Maintenance Development, Testing &	nce and I	and Repair - Evaluation	PE NUMBER AND TITLE 0605878A Maintenance and Repair - Research, Development, Testing & Evaluation		PROJECT M744
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M744 Modernization of Utilities	0	0	9972	0	0 .	0	0	0	0	0
A. Mission Description and Justification: Project M744 Modernization of Utilities. This is not a new start. It is the repair to an existing facility and system infrastructure. This project will finance the repair of the steam heat distribution system, Edgewood Area, Aberdeen Proving Ground. This steam heat distribution system is 40 to 50 years old. Corrosion-related problems and other deficiencies are discharging condensate into the ground. Some areas of the system are beyond repair and must be replaced. The condensate piping is severely corroded and in extremely poor condition. Leaks and steaming are common place. Standing water exists in many manholes causing deterioration and excessive spalling and cracking, posing serious safety and environmental concerns. Boilers in the Central Plant (Vintage 1940) need to be replaced. They are inefficient, in poor shape and technically obsolete. The estimated \$10 million will repair the entire steam system.	oct M744 Me of the steam I other deficited and in extending, posir	odernization of the distribut encies are distribut tremely poor the serious safes solete. The serious calculations and solete.	of Utilities. ion system, scharging cc condition. ety and env	This is not a Edgewood & Indensate int Leaks and st ironmental o Indilion willion will	I new start. In Area, Aberdee of the ground eaming are concerns. Bo	t is the repair en Proving C . Some area ommon plac ilers in the C	r to an exist bround. The s of the sys e. Standing Central Plan system.	Project M744 Modernization of Utilities. This is not a new start. It is the repair to an existing facility and system spair of the steam heat distribution system, Edgewood Area, Aberdeen Proving Ground. This steam heat distributions and other deficiencies are discharging condensate into the ground. Some areas of the system are beyond repair sorroded and in extremely poor condition. Leaks and steaming are common place. Standing water exists in many and cracking, posing serious safety and environmental concerns. Boilers in the Central Plant (Vintage 1940) need and technically obsolete. The estimated \$10 million will repair the entire steam system.	nd system distribution nd repair and in many ma	system is I must be inholes be
FY 1996 Accomplishments: Project not funded in FY 96.	FY 96.									
FY 1997 Planned Program: Project not funded in FY 97.	FY 97.									
FY 1998 Planned Program:	n system, Ed	gewood Area	ı, Aberdeen	Proving Gro	und, MD					
FY 1999 Planned Program: Project not funded in FY 99.	FY 99.									
B. Project Change Summary FY 1997 President's Budget Annowigated Value		FY 1996 0		FY 1997 0	FY 1998 0	FY 1999 0	67 0			
Adjustments to Appropriated Value FY 1998 President's Budget Request			0	0	9972		0			
Change Summary Explanation: Funding: FY 1998 funds (+9972) required for utility modernization.	266+) spunj	72) required	for utility m	odernization	_:					
Project M744			Page 8 of 8 Pages	8 Pages			Exhib	Exhibit R-2 (PE 0605878A)	605878A)	

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BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605879A Real	птге Real Prop	PE NUMBER AND TITLE OCCUPATION SERVICES (RPS)	rices (RP	(S)		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	90457	88945	88936	88504	88959	90807	92916	Continuing	Continuing
M0UU Real Property Services - TECOM	0	61601	57925	57715	57278	56850	58037	59393	Continuing	Continuing
M1UU Real Property Services - AMC MSC/LAB	0	24338	26248	26261	26114	26826	27380	28011	Continuing	Continuing
M4UU Real Property Services - COE	0	4518	4772	4960	5112	5283	5390	5512	Continuing	Continuing

refuse, pest control management, snow/ice and sand removal. It also supports the engineering, general management, supervision, mapping, planning, utilization inspection Mission Description and Budget Item Justification: This program is not a new start. Program represents a zero sum transfer from Program Element 0605896A Base sewage systems. Element also finances the labor associated with real property support along with fire prevention, custodial service contracts, collection and disposal of and other activities of a general nature performed by the Directorate for Public Works (DPW) both in-house and by contract. Includes effort directed toward support of necessary for operation of utilities (with the exception of communications). It includes purchase of electricity, operations of heating plants and water distribution and Operations - RDT&E of alpha account "J" Operation of Utilities and "M" Other Engineering to this new program element. Element finances activities and functions installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605879A)

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 090	PE NUMBER AND TITLE 0605879A Real	PE NUMBER AND TITLE 0605879A Real Property Services (RPS)	erty Sen	rices (RF	(S)	2 2	PROJECT MOUU
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M0UU Real Property Services - TECOM	0	61601	57925	57715	57278	56850	58037	59393	59393 Continuing Continuing	Continuing

utilities and other engineering services for the U.S. Army Materiel Command (AMC) installations assigned to the Test and Evaluation Command (TECOM), i.e. Aberdeen operation of 1400 miles of electric distribution and 600 miles of water and sewer systems. Additionally, this project provides utilities services to the TECOM test mission Proving Ground, MD; Dugway Proving Ground, UT; Yuma Proving Ground, AZ and White Sands Missile Range, NM. Funding provides for the utility costs and system and over 100 tenants and satellites that reside in 24 million square feet of facilities. Another major responsibility is the removal of snow and sand, extremely important to This project funds the operations of the safety of the workforce that travel on approximately 3000 mile road systems located on the TECOM installations. This account also funds the contracts for custodial and refuse collections and civilian firefighters responsible for the safety and health of the workforce that support the varied Army missions located on these installations. A. Mission Description and Justification: Project MOUU - Operation of Utilities & Other Engineering - AMC Test Ranges:

FY 1996 Accomplishments: Program funded in Program Element 0605896A.

FY 1997 Planned Program:

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Fund operations of utilities and other engineering at White Sands Missile Range, New Mexico. Fund operations of utilities and other engineering at Aberdeen Proving Ground, Maryland. Fund operations of utilities and other engineering at Yuma Proving Ground, Arizona. Fund operations of utilities and other engineering at Dugway Proving Ground, Utah 5596 3949 4372 1505 61601 Total

FY 1998 Planned Program:

- Fund operations of utilities and other engineering at Aberdeen Proving Ground, Maryland. Fund operations of utilities and other engineering at Dugway Proving Ground, Utah. 5504 33874
 - Fund operations of utilities and other engineering at White Sands Missile Range, New Mexico. 4095
 - Fund operations of utilities and other engineering at Yuma Proving Ground, Arizona. 4452 7925

Project M0UU

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET	R-2 Exhibi	DATE	February 1997
BUDGET ACTIVITY 6 - Manageme	BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605879A Real	STITLE Real Prope	PE NUMBER AND TITLE 0605879A Real Property Services (RPS)	PROJECT MOUU
FY 1999 Planned Program:	Program: Fund operations of utilities and other engineering at Aberdeen Proving Ground, Maryland. Fund operations of utilities and other engineering at Dugway Proving Ground, Utah. Fund operations of utilities and other engineering at White Sands Missile Range, New Mexico. Fund operations of utilities and other engineering at Yuma Proving Ground, Arizona.	een Proving Groun ay Proving Ground Sands Missile Rar Proving Ground, A	nd, Maryland. I, Utah. ge, New Mexico Arizona.		
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	e Summary S Budget or printed Value	FY 1997 62918 61601	FY 1998 58244	FY 1999 57934	
FY 1998 President's Budget Request	S Budget Request 0		57925	57715	
Project MOUU	Pag	Page 3 of 7 Pages		Exhibit R-2 (PE 0605879A)	(879A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE NI 0 0 0	PE NUMBER AND TITLE 0605879A Real	E NUMBER AND TITLE 0605879A Real Property Services (RPS)	erty Sen	rices (RP	(S	a 2	PROJECT M1UU
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1UU Real Property Services - AMC MSC/LAB	0	24338	26248	26261	26114	26826	27380	28011	28011 Continuing Continuing	Continuing

A. Mission Description and Justification: Project M1UU - Operation of Utilities and Other Engineering - AMC MSC/LAB: Finances the operation of utilities and (ARDEC), Picatinny Arsenal, NJ; Army Research Laboratory (ARL), Adelphi, MD; and Soldier Systems Command (SSCOM), formerly Natick Research, Development other engineering services for U.S. Army Materiel Command (AMC) installations and laboratories, i.e., Armament Research, Development and Engineering Center and Engineering Center (NRDEC), Natick, MA.

FY 1996 Accomplishments: Program funded in Program Element 0605896A.

FY 1997 Planned Program:

- Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ.
 - 5476 Army Research Laboratory, Adelphi, MD.
 - 2647 Soldier Systems Command, Natick, MA.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
 - Total 24338

FY 1998 Planned Program:

- Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ. 16493
 - 6839 Army Research Laboratory, Adelphi, MD.
- 2916 Soldier Systems Command, Natick, MA.
- Total 26248

FY 1999 Planned Program:

- Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ. 16373
 - 7229 Army Research Laboratory, Adelphi, MD.
- 2659 Soldier Systems Command, Natick, MA.
 - otal 26261

Project M1UU

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Exhibit R-2 (PE 0605879A)

RDT&E BUDGET I	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit	t) DATE	February 1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605879A Real	этіть Real Proper	PE NUMBER AND TITLE 0605879A Real Property Services (RPS)	PROJECT M1UU
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996	FY 1997 24858 24338 24338	<u>FY 1998</u> 24937 26248	<u>FY 1999</u> 26098 26261	
		• .			
Project M1UU	Pc	Page 5 of 7 Pages		Exhibit R-2 (F	Exhibit R-2 (PE 0605879A)

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Eliment Actual Estimate Complex Continuoro C		RDT&E BUDGET ITEM JUS	EM JUS	TIFICATION SHEET (R-2 Exhibit)	FION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	160
Thousands) COE COE Corps Corps of Engineers Laboratories, i. wer, NH; Construction Engineering Laporatoring Laction Engineering Laction Engineering Research Labora aphic Engineering Research Corps Innovation Research/Small Susiness Innovation Research/Small Susiness Innovation Research Labora aphic Engineering Center, Alexandration Research and Engineering Labora aphic Engineering Research Labora anhic Engineering Research Labora Alexandration Engineering Research Labora Alexandration Engineering Center Alexandration Engineering Research Labora	BUDGET ACTIVITY 6 - Managem€	ent and Support			PE NI 060	MBER AND 5879A R	ritle leal Prop	erty Serv	rices (RP		4	PROJECT M4UU
COPE LJustification: Project M4UU - O Corps of Engineers Laboratories, i. wer, NH; Construction Engineering ays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Research/Small Susiness Innovation Research/Small ays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Center, Alexanda aphic Engineering Center, Alexanda aphic Engineering Center, Alexanda aghic Engineering Research Labora agions Research and Engineering Lacition Engineering Research Labora aphic Engineering Center Alexandrandal Engineering Research Labora		COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Lustification: Project M4UU - O Corps of Engineers Laboratories, i. ver, NH; Construction Engineering rays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Research Labora aphic Engineering Center, Alexand Susiness Innovation Research/Small dusiness Innovation Research Labora aphic Engineering Center, Alexand aphic Engineering Center, Alexand action Engineering Center, Alexand aphic Engineering Research Labora aphic Engineering Research Labora asys Experiment Station, Vicksburg, egions Research and Engineering La cition Engineering Research Labora aphic Engineering Research Labora	M4UU Real Property	Services - COE	0	4518	4772	4960	5112	5283	5390	5512	Continuing	Continuing
Program funded in Program Eleme vays Experiment Station, Vicksburg egions Research and Engineering L. action Engineering Research Labora aphic Engineering Research/Small Business Innovation Research/Small egions Research and Engineering L. action Engineering Research Labora aphic Engineering Center, Alexand action Engineering Center, Alexand asys Experiment Station, Vicksburg egions Research and Engineering L. action Engineering Research Labora action Engineering Research Labora edition Engineering Research Labora	A. Mission Descri engineering service Laboratories (CRRI VA.	ption and Justification: Projes s for U.S. Corps of Engineers La EL); Hanover, NH; Construction	ct M4UU - O aboratories, i Engineering	peration of e., Waterway Research Le	Utilities and vs Experime thoratory (C	d Other Eng nt Station (V ERL), Chan	incering - C VES), Vicksl paign, IL; a	COE: Finan burg, MS; C nd Topograp	ces the oper old Regions shic Enginee	ation of utilii Research an ring Center (ties and othe d Engineerii (TEC), Alex	r ng andria,
rays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Research Labora aphic Engineering Center, Alexand Susiness Innovation Research/Small egions Research and Engineering Labora aphic Engineering Research Labora aphic Engineering Center, Alexand ays Experiment Station, Vicksburg as Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Research Labora aphic Engineering Research Labora aphic Engineering Research Labora	FY 1996 Accompli	shments: Program funded in Pr	ogram Elem	ent 0605896	Ą.							a Assalta
rays Experiment Station, Vicksburg egions Research and Engineering Luction Engineering Research Labora aphic Engineering Center, Alexand Business Innovation Research/Small asys Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Center, Alexand ays Experiment Station, Vicksburg ays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Research Labora aphic Engineering Research Labora	FY 1997 Planned l	Program:										
action Engineering Research Labora aphic Engineering Center, Alexand Business Innovation Research/Small asys Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Center, Alexand ays Experiment Station, Vicksburg egions Research and Engineering Lection Engineering Research Labora aphic Engineering Research Labora aphic Engineering Center Alexandrandic Engineeri	1080		n, Vicksburg	, MS	Hanover NI	:T						
aphic Engineering Center, Alexand Business Innovation Research/Small ays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Center, Alexandi ays Experiment Station, Vicksburg ays Experiment Station, Vicksburg egions Research and Engineering Lecition Engineering Research Labora aphic Engineering Center Alexandrahic Engineering Center Alexandrahic Engineering Center Alexandrahic Engineering Center Alexandrah	1098		earch Labora	tory, Champ	aign, IL	•						
ays Experiment Station, Vicksburg egions Research and Engineering Labora aphic Engineering Center, Alexand ays Experiment Station, Vicksburg egions Research and Engineering Labora edition Engineering Research Labora anhic Engineering Center, Alexandrahic Engineeri	1128		iter, Alexand	ria, VA Business Te	T. Abrology T.	Tonefor (CD)	o/errd) De	5				
 FY 1998 Planned Program: 1150 Waterways Experiment Station, Vicksburg, MS 1193 Cold Regions Research and Engineering Laboratories; Hanover, NH 1188 Construction Engineering Research Laboratory, Champaign, IL 1241 Topographic Engineering Center, Alexandria, VA Total 4772 FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonocraphic Engineering Center Alexandria VA 	4			Transport of the state of the s	cimology in	Idiolei (SDI	NSI INJ FIN	ığı anııs.				
 1150 Waterways Experiment Station, Vicksburg, MS 1193 Cold Regions Research and Engineering Laboratories; Hanover, NH 1284 Construction Engineering Research Laboratory, Champaign, IL 1241 Topographic Engineering Center, Alexandria, VA FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tomoranhic Engineering Center Alexandria VA 	FY 1998 Planned F	Program:										
1193 Cold Regions Research and Engineering Laboratories; Hanover, NH 1188 Construction Engineering Research Laboratory, Champaign, IL 1241 Topographic Engineering Center, Alexandria, VA Total 4772 FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonnoranhic Fnoineering Center A Lavandria VA	• 1150	Waterways Experiment Statio	n, Vicksburg	, MS								
1188 Construction Engineering Research Laboratory, Champaign, IL 1241 Topographic Engineering Center, Alexandria, VA Total 4772 FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonnoranhic Engineering Center Alexandria VA	• 1193		ngineering L	aboratories; 1	Hanover, NI	-						
 1241 Topographic Engineering Center, Alexandria, VA Total 4772 FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratory, Champaign, IL 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonnoranhic Engineering Center Alexandria VA 	• 1188		earch Labora	tory, Champ	aign, IL							
 FY 1999 Planned Program: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonnoranhic Engineering Center Alexandria VA 		Topographic Engineering Cen	iter, Alexand	ia, VA								
 F. 1999 Flanned Frogram: 1195 Waterways Experiment Station, Vicksburg, MS 1240 Cold Regions Research and Engineering Laboratories; Hanover, NH 1235 Construction Engineering Research Laboratory, Champaign, IL 1200 Tonnorablic Engineering Center Alexandria VA 	14 000 VY											
	FY 1999 Planned 1	rogram: Waterways Experiment Statio	n. Vicksburg	MS								
	• 1240	Cold Regions Research and E	ngineering La	boratories; I	Hanover, NF							
	1235	Construction Engineering Res	earch Labora	tory, Champ	aign, IL							
		l opograpnic Engineering Cen	ter, Alexand	ia, vA								

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Project M4UU

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Exhibit R-2 (PE 0605879A)

Services (RPS) FY 1999 4944 4960 Exhibit R-2 (PE 0605879A)	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	A JUSTIFICATION	ON SHEET	R-2 Exhib	(t) DATE	Fahrijany 1997
FY 1992 FY 1992 FY 1999 FY 1999	0		PE NUMBER AN 0605879A	D TITLE Real Prope	rty Services (RPS)	PROJECT M4UU
dent's Budget Request 0 4518 4772 4960	B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	F <u>Y 1996</u> 0	FY 1997 4614 4518	FY 1998 4769	F <u>Y 1999</u> 4944	
Page 7 of 7 Pages	FY 1998 President's Budget Request	0	4518	4772	4960	
Page 7 of 7 Pages						
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	Project M4UU	Pa	ge 7 of 7 Pages		Exhibit R-2	(PE 0605879A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (R	2-2 Exhi	bit)		DATE Fe	February 1997	397
BUDGET ACTIVITY 6 - Management and Support			PE NI 060 Dev	PE NUMBER AND TITLE 0605896A Base Operations - Resea Development, Testing & Evaluation	тіт <u>г</u> Заѕе Оре nt, Testin	rations - g & Eval	PENUMBER AND TITLE 0605896A Base Operations - Research Development, Testing & Evaluation			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	306481	219946	231653	233633	240512	246149	249966	254143	Continuing	Continuing
M0ZZ Base Operations - Army Materiel Command (AMC) Test Ranges	190564	145038	148043	152287	160030	165914	168898	171368	Continuing	Continuing
M1ZZ Base Operations - AMC Major Subordinate Commands and Laboratories	99156	62727	71863	71311	70380	70076	70709	72184	Continuing	Continuing
M4ZZ Base Operations - Corps of Engineers	16761	12181	11747	10035	10102	10159	10359	10591	Continuing	Continuing

of post supply functions; (2) direct and general maintenance activities; (3) operation and maintenance of transportation equipment and local transportation; (4) operation of maintaining U.S. Army RDTE installations, laboratories, test ranges and a significant tenant/satellite population. BASEOPS activities and functions include: (1) operation attached to the installation; (9) automation activities; (10) reserve component support; (11) development and administration of morale, welfare and recreation facilities and reflects realignment of "J" Operation of Utilities and "M" Other Engineering to 0605879A, Operation of Utilities and Other Engineering. Includes effort directed toward laundry and dry cleaning plants and contractual services where Army-owned plants are not operated; (5) Army food service program; (6) support to military and civilian operations; (14) Defense Finance and Accounting Service (DFAS); (15) contracting operations; and (16) records management and publications. This is a labor intensive personnel; (7) operation and administration of unaccompanied personnel housing; (8) command element activities required for commanding all Army units assigned or Mission Description and Budget Item Justification: The Base Operations (BASEOPS) program finances those activities and functions necessary for operating and program, providing salaries and related personnel benefits for authorized civilian personnel and associated administrative support functions outlined above. FY 1997 activities along with quality of life initiatives for the military and their families; (12) police and security services and counterintelligence; (13) resource management support of installations or operations required for general research and development use and therefore is appropriate to Budget Activity 6.

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Exhibit R-2 (PE 0605896A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	rations - g & Eval	Researc uation	Ę.	a =	PROJECT MOZZ
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M0ZZ Base Operations - Army Materiel Command (AMC) Test Ranges	190564	145038	148043	152287	160030	165914	168898	171368	171368 Continuing Continuing	Continuing

Provides for the test infrastructure base support along with common service base support to over 100 tenants and satellites served by the four TECOM Major Range & Test civilian workforce commensurate with technical testing, diverse Army R&D tenants, and a principal training mission at the Ordnance Center and School. Effective FY 97 Evaluation Command (TECOM), i.e., Yuma Proving Ground, AZ; Aberdeen Proving Ground, MD; Dugway Proving Ground, UT; and White Sands Missile Range, NM. operations of utilities and other engineering support funds transferred to the new PE 0605879A. Effective FY 98, funding for Youth Activities, Child Development and A. Mission Description and Justification: Finances installation management for operating and maintaining technical test ranges assigned to the U.S. Army Test and Facility Bases (MRTFB). Base Operations infrastructure includes fixed costs for payroll as well as personnel costs associated with downsizing and re-engineering to Army Community Services will transfer from OMA to RDTE.

FY 1996 Accomplishments:

- Garrison, Aberdeen Proving Ground Support Activity, MD 103278
 - Dugway Proving Ground, UT 19437
- White Sands Missile Range, NM 49440
- Yuma Proving Ground, AZ 18409
- Above funding included specific projects below:
- Civilian Illness and Injury Compensation Costs.
 - Defense Finance and Accounting Services
- Military Police (MP) conversion to civilian police/guards
 - 190564 Total

FY 1997 Planned Program:

- Garrison, Aberdeen Proving Ground Support Activity, MD 74915
 - Dugway Proving Ground, UT 15738
- White Sands Missile Range, NM 38653
 - Yuma Proving Ground, AZ 15604

Project M0ZZ

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Exhibit R-2 (PE 0605896A)

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		RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997	760
BUDGET ACTIVITY 6 - Managen	этімтү ageme	виреет Астіміту 6 - Management and Support	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation		PROJECT MOZZ
FY 1997	Planned	 FY 1997 Planned Program: (continued) Above funding includes specific projects below: Civilian Illness and Injury Compensation Costs. Defense Finance and Accounting Services. Funds transfer of Materials Technology Laboratory, Watertown, MA to Aberdeen Proving Ground, MD. (BRAC Action) 	Watertown, MA to Aberdeen Proving Ground, I	dD. (BRAC Action)	
Total	128 145038	 Funds Military Police (MP) conversion to civilian police/guards (partial workyears) Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 	dice/guards (partial workyears) ology Transfer (SBIR/STTR) Programs.		
FY 1998 Planned Program:	Janned P	rogram: Garrison Aberdeen Proving Ground Support Activity, 34D			
• •	14350	Dugway Proving Ground, UT			
	15849	Yuma Proving Ground, AZ			
•		Above funding includes specific projects below: - Civilian Illness and Injury Compensation Costs			
		- Defense Finance and Accounting Services - Fund transfer of Materials Technology Laboratory, Watertown, MA to Aberdeen Proving Ground, MD (BRAC Action)	atertown, MA to Aberdeen Proving Ground, MI	(BRAC Action)	
Total	148043	 Military Police (MP) conversion to civilian police/guards 	rds		
FY 1999 Planned Program:	anned P	ogram:			
•	80842	Garrison, Aberdeen Proving Ground Support Activity, MD			
•	14785	Dugway Proving Ground, UT			
• •	16312	white Sands Missile Kange, NM Yuma Proving Ground, AZ			
•		Above funding includes specific projects below:			
		 Civilian timess and injury Compensation Costs Defense Finance and Accounting Services 			
		- Fund transfer of Materials Technology Laboratory, Watertown, MA to Aberdeen Proving Ground, MD (BRAC Action)	'atertown, MA to Aberdeen Proving Ground, M	O (BRAC Action)	
Total	152287	rannens a card (1971) conversion to cranian ponto gua	11 (12)		
Project M0ZZ	77	Pag	Page 3 of 8 Pages	Exhibit R-2 (PE 0605896A)	į

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICATIO	N SHEET	(R-2 Exhib	it)	DATE February 1997	7 1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605896A Base Development, T	D тіт <u>ге</u> Base Opera ent, Testing	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation		PROJECT MOZZ
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 192211 197560 -6996	FY 1997 143043 145038	FY 1998 135950	FY 1999 141028		
			C+00+1	107761		
Project M077	Č	Pare A of & Pare		.; .; .;	ייייייייייייייייייייייייייייייייייייי	
		2010/1010			IN-Z (F.E. DOUGOSO	142.173

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RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	760
BUDGET ACTIVITY 6 - Management and Support			PE N 060 Dev	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	rations . ig & Eval	Researc			PROJECT M1ZZ
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M1ZZ Base Operations - AMC Major Subordinate Commands and Laboratories	99156	62727	71863	71311	70380	70076	70709	72184	Continuing	Continuing
A. Mission Description and Justification: Finances installation management for operating and maintaining other U.S. Army Materiel Command RDTE installations and laboratories, i.e., Army Research Laboratory (ARL), Adelphi, MD; Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, NJ; and Soldier Systems Command (SSCOM), formerly, Natick Research, Development and Engineering Center (NRDEC), MA. Provides for the infrastructure base support along with common service base support to tenants and satellites. Effective FY 97, operations of utilities and other engineering support funds will transfer to the new PE 0605879A.	nces installatio L), Adelphi, M Vatick Research satellites. Effec	n manageme D; Armame , Developm tive FY 97,	ent for opera nt Research, nent and Eng operations o	ting and ma Developme ineering Ce of utilities an	intaining oth ant and Engir nter (NRDE) nd other engi	er U.S. Arm leering Cent (C), MA. Pro neering supp	y Materiel C er (ARDEC) wides for the	Command RU, Picatinny / e infrastructu	OTE installar Arsenal, NJ; rre base supp the new PE	ions and and ort along
FY 1996 Accomplishments: Funding by installation as follows: 41404 ARL, Adelphi, MD 40851 ARDEC, Picatinny Arsenal, NJ 16901 SSCOM, Natick, MA Total 99156	tion as follows: NJ									
FY 1997 Planned Program: Funding by installation as follows: 23918 ARL, Adelphi, MD 26292 ARDEC, Picatinny Arsenal, NJ 12182 SSCOM, Natick, MA 335 Small Business Innovation Research/Small Total 62727	tion as follows: NJ Research/Small	Business T	echnology T	ransfer (SB)	Business Technology Transfer (SBIR/STTR) Programs.	ograms.				
FY 1998 Planned Program: Funding by installation as follows: 24380 ARL, Adelphi, MD 34626 ARDEC, Picatinny Arsenal, NJ 12857 SSCOM, Natick, MA Total 71863	ion as follows: NJ									
Project M1ZZ			Page 5 of 8 Pages	8 Pages			Exhibi	Exhibit R-2 (PE 0605896A)	605896A)	

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 1997
	December And TITLE 0605896A Base Operations - Research,	
	Development, Testing & Evaluation	

FY 1999 Planned Program: Funding by installation as follows:

22933 ARL, Adelphi, MD

34980 ARDEC, Picatinny Arsenal, NJ

13398 SSCOM, Natick, MA

71311 Total

NOTE: Effective FY 98, ARDEC includes OMA transfer of Youth Activities, Child Development Services, Army Community Services, Public Affairs, ADP and Base Communications to RDTE.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	101902	61588	57687	57551	
Appropriated Value	104739	62727			
Adjustments to Appropriated Value	-5583				
FY 1998 President's Budget Request	99156	62727	71863	71311	

Change Summary Explanation:

Funding: FY 1998 increase reflects an OMA to RDTE transfer (+14176). FY 1999 increase reflects an OMA to RDTE transfer (+13760).

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Project M1ZZ

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Exhibit R-2 (PE 0605896A)

	RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	45
BUDGET ACTIVITY 6 - Managem	BUDGET ACTIVITY 6 - Management and Support			PE N	PE NUMBER AND TITLE 0605896A Base Development, T	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation	rations - g & Eval	Researc			PROJECT M4ZZ
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M4ZZ Base Operat	Base Operations - Corps of Engineers	16761	12181	11747	10035	10102	10159	10359	10591	Continuing	Continuing
A. Mission Descr Engineers RDTE la Construction Engir	A. Mission Description and Justification: Finances BASEOPS activities and functions necessary for operating and maintaining the following U.S. Army Corps of Engineers RDTE laboratories: Waterways Experiment Station (WES), Vicksburg, MS; Cold Regions Research and Engineering Laboratories (CRREL), Hanover, NH; Construction Engineering Research Laboratory (CERL), Champaign, IL; and Topographic Engineering Center (TEC), Alexandria, VA.	ces BASEOPe ent Station (V	s activities an ES), Vicksbign, IL; and	nd function ourg, MS; Co Topographi	s necessary old Regions ic Engineerii	activities and functions necessary for operating and maintaining the following U.S. Army Corps of ES), Vicksburg, MS; Cold Regions Research and Engineering Laboratories (CRREL), Hanover, NH ign, IL; and Topographic Engineering Center (TEC), Alexandria, VA.	and maintai d Engineerin EC), Alexan	ning the foll g Laboratori dria, VA.	owing U.S ies (CRREL)	Army Corps	of IH;
FY 1996 Accomplishments:	lishments: 5 WES. Vickshurg MS										
4209											
• 4042											
	t TEC, Alexandria, VA										
10tal 16/61											
FY 1997 Planned Program:	Program:										
• 2961	CERL, Champaign, IL										
• 2973											
3044											
2914				•							
Total 12181	MINAH DUSHICSS HIROVALION KESERICH/SMAII	esearcn/small	Business 16	scnnology 1	ranster (SBI	Business 1 ecnnology 1 ransfer (SBIK/S11K) Programs.	ograms.				
FY 1998 Planned Program:	Program:										
• 2925	CERL, Champaign, IL										
• 2937											
9054											
2831	WES, Vicksburg, MS										
Total 11747											
Project M4ZZ				Page 7 of 8 Pages	8 Pages			Exhibit	Exhibit R-2 (PE 0605896A)	05896A)	
				1282							Item 133

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIO	N SHEET (R-2 Exhib	it)	DATE February 1997	97
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605896A Base Development, T	D TITLE Base Opera ent, Testing	PE NUMBER AND TITLE 0605896A Base Operations - Research, Development, Testing & Evaluation		PROJECT M4ZZ
FY 1999 Planned Program: 2499 CERL, Champaign, IL 2509 CRREL, Hanover, NH 2609 TEC, Alexandria, VA 2418 WES, Vicksburg, MS Total 10035						
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 16709 17179 -418	FY 1997 12018 12181	<u>FY 1998</u> 11660	FY 1999 9933		
FY 1998 President's Budget Request	16761	12181	11747	10035		
Project M4ZZ	Pag	Page 8 of 8 Pages		Exhib	Exhibit R-2 (PE 0605896A)	
		1007			1	Item 123

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LEM JUS	TIFICA	TION SI	HEET (R	R-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support			PE N 060	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	тп <u>ге</u> Лападет oment)	ent Head	Iquarters	(Resear	ch	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15007	18407	4837	4765	5156	5142	5111	5109	Continuing	Continuing
MM03 Command Headquarters - MRDC	3597	0	0	0	0	0	0	0	Continuing	Continuing
MM65 Army Research Laboratory	4773	4700	4837	4765	5156	5142	5111	5109	Continuing	Continuing
M831 AKAMAI	6637	13707	0	0	0	0	0	0	0	0

resources (manpower and dollars), and (5) review and evaluation of program performance. Provides salaries and related personnel benefits for authorized civilian personnel and the associated administrative support (travel, supplies and equipment). Beginning FY 1997, Command Headquarters - MRDC is funded in PE 0605801A. Includes Mission Description and Budget Item Justification: This program funds the Research, Development, Test and Evaluation (RDTE) Army Management Headquarters research and development effort directed toward support of installations or operations required for general research and development use and therefore is appropriate to Detrick, MD. This program provides for (1) the development of policy and guidance, (2) long-range planning, (3) programming and budgeting, (4) management of Activities (AMHA) for the U.S. Army Research Laboratory (ARL), Adelphi, MD, and the U.S. Army Medical Research and Materiel Command (USAMRMC), Ft Budget Activity 6.

Page 1 of 5 Pages

Exhibit R-2 (PE 0605898A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (F	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 6 - Management and Support			PE NI 060	PE NUMBER AND TITLE 0605898A Manage and Development)	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	ent Heac	quarters	(Resear		PROJECT MM03
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
MM03 Command Headquarters - MRDC	3597	0	0	0	0	0	0	0	Continuing	Continuing
A. Mission Description and Justification: This project provides the funding for management headquarters activities at the U.S. Army Medical Research and Materiel Command (USAMRMC), Ft Detrick, MD, to (1) develop medical RDTE program policy and guidance; (2) perform long-range planning, programming and budgeting; (3) provide the management of resources; and (4) conduct program performance review and evaluation for the RDTE appropriation. This project provides salaries and related personnel benefits for authorized civilian personnel and the administrative support (temporary duty travel, operating supplies and equipment).	oject provide velop medica tct program g	ss the fundin I RDTE propersormance	g for manag gram policy review and pport (temp	gement head and guidanc evaluation for	quarters active; (2) perforror the RDTE avel, operatir	ities at the Unities at the Unities appropriation	J.S. Army Ne planning, on. This pro	Aedical Rese programmin yect provide	arch and Ma g and budge s salaries an	teriel ting; (3) 1 related
 FY 1996 Accomplishments: 3597 Funded the operation of the USAMRDC headquarters activities which administers the medical research, development and acquisition program to sustain military medical technological superiority. Total 3597 	ISAMRDC h	eadquarters rriority.	activities wł	nich adminis	ters the medi	cal research	, developme	ent and acqui	isition progra	ım to
FY 1997 Planned Program: Program resources realigned to PE	aligned to PE	0605801A.								
FY 1998 Planned Program: Program resources realigned to PE	aligned to PE	0605801A.								
FY 1999 Planned Program: Program resources realigned to PE	aligned to PE	0605801A.								
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 3690 3795		FY 1997 0	FY 1998 0	FY 1999	6 0			
Adjustments to Appropriated value FY 1998 President's Budget Request		-198 3597	8 /	0	0		0			
Project MM03			Page 2 of 5 Pages	5 Pages			Exhib	Exhibit R-2 (PE 0605898A))605898A)	

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	RDT&E BUDGET ITEM JU	EM JUS	TIFICA	TION SI	STIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 6 - Managem	BUDGET ACTIVITY 6 - Management and Support			PE NI 060 ano	PE NUMBER AND TITLE 0605898A Manage and Development)	⊓⊓∟E flanagem oment)	ent Head	lquarters	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)		PROJECT MIM65
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
MM65 Army Resear	Army Research Laboratory	4773	4700	4837	4765	5156	5142	5111	5109	Continuing	Continuing
A. Mission Descri Adelphi, MD, to (1 resources; and (4) of personnel and the a	A. Mission Description and Justification: This project provides the funding for management headquarters activities at the U.S. Army Research Laboratory (ARL), Adelphi, MD, to (1) develop RDTE program policy and guidance; (2) perform long range planning, programming and budgeting; (3) provide for the management of resources; and (4) conduct program performance review and evaluation. This project provides for the salaries and related personnel benefits for the authorized civilian personnel and the administrative support (temporary duty travel, operating supplies and equipment).	oject provide and guidance iew and eval duty travel,	s the fundin; (2) perfornation. This	g for manag n long range project pro	ement headq planning, pi vides for the quipment).	uarters activ rogramming salaries and	ities at the U and budgeti related pers	J.S. Army R. ng; (3) provi onnel benefi	esearch Labo ide for the m its for the aut	oratory (AR anagement thorized civ	of Iian
FY 1996 Accomplishments: • 4773 Funded technol	lishments: Funded the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.	headquarters	activities w	hich admini	sters the Arn	ıy laboratory	/ research ar	ıd developm	ent program	to sustain	
FY 1997 Planned Program: • 4700 Funds technol Total 4700	Program: Funds the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.	eadquarters a	ctivities wh	ich administ	ers the Army	/ Iaboratory	research and	l developmeı	nt program to	o sustain	
FY 1998 Planned Program: • 4837 Funds technord Total 4837	Program: Program: Funds the operation of ARL headquarters activities which administers the Army laboratory research and development program to sustain technological superiority.	eadquarters a	ctivities whi	ich administ	ers the Army	/ laboratory	esearch and	developmer	nt program t	o sustain	
FY 1999 Planned Program: • 4765 Funds technol	Program: Funds the operation of ARL headquarters technological superiority.		ctivities whi	ch administ	ers the Army	laboratory 1	esearch and	developmer	activities which administers the Army laboratory research and development program to sustain	o sustain	
Project MM65				Page 3 of 5 Pages	5 Pages			Exhibit	Exhibit R-2 (PE 0605898A)	305898A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATIO	ON SHEET	(R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 6 - Management and Support		PE NUMBER AND TITLE 0605898A Manage and Development)	ю тпсе Manageme opment)	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)	s (Research	PROJECT MM65
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 4837 4971	<u>FY 1997</u> 4801 4700	FY 1998 4822	FY 1999 4727		
Adjustments to Appropriated Value FY 1998 President's Budget Request	-198 4773	4700	4837	4765		
Project MM65	Pc	Page 4 of 5 Pages		Exhib	Exhibit R-2 (PE 0605898A)	٩)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	266
BUDGET ACTIVITY 6 - Management and Support			96 NE	PE NUMBER AND TITLE 0605898A Manage and Development)	ritle fanagem iment)	ent Heac	lquarters	PE NUMBER AND TITLE 0605898A Management Headquarters (Research and Development)		PROJECT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M831 AKAMAI	6637	13707	0	0	0	0	0	0	0	0

(MDIS) system at Tripler Army Medical Center, HI, for tele-imaging throughout the Pacific Rim and to further the proliferation of clinically effective time and distance A. Mission Description and Justification: This is a state-of-the art tele-imaging advanced development effort to implement the medical diagnostic imaging support independent medicine techniques through the use of state-of-the-art telecommunications.

FY 1996 Accomplishments:

6637 Expanded number of spokes and continued hub infrastructure development.

Total 6637

FY 1997 Accomplishments:

13372 Expand number of spokes and continued hub infrastructure development.

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 335

Total 1370

FY 1998 Planned Program: Project is not funded in FY 1998.

FY 1999 Planned Program: Project is not funded in FY 1999.

B. Project Change Summary FY 1997 President's Budget	FY 1996 6807	FY 1997 0	FY 1998 0	FY 1999 0	
Appropriated Value	7000	13707			
Adjustments to Appropriated Value	-363				
FY 1998 President's Budget Request	6637	13707	0	0	

Change Summary Explanation: Funding - FY 97 increase of (+13707) provided by Congress to support AKAMAI efforts at Tripler Army Hospital.

Project M831

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Exhibit R-2 (PE 0605898A)

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	1-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ţ		PE N	PE NUMBER AND TITLE 0102419A Aerostat Joint Program Office	ппе Verostat	loint Pro	gram Off			PROJECT DE55
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE55 Aerostat Joint Program	4000	26376	86193	134298	109450	113399	0	0	130900	604616

Defense Command. The program mission is to maximize the battle space of land, sea and air based missile systems by providing Over-the-Horizon (OTH) surveillance and such as Patriot, Medium Extended Air Defense System/Corps SAM, Aegis and Advanced Medium Range Air-to-Air Missile (AMRAAM). This project supports upgrades expand the battlefield commander's surveillance and engagement capability against cruise missiles and other low flying aircraft by extending the battle space for systems directed the establishment of the Aerostat Joint Project Office (JPO) for Land Attack Cruise Missile Defense (LACMD) and directed the funding for FY 96-01. This is a LACMD. Aerostat sensors provide the OTH surveillance/precision tracking for the Air Directed Surface to Air Missile (ADSAM) concept. The role of the aerostat is to multiservice effort with the Army as the lead service. The Aerostat JPO is assigned to the AAE with operational control assigned to the U. S. Army Space and Strategic A. Mission Description and Budget Item Justification: The Under Secretary of Defense (Acquisition and Technology) and the Army Acquisition Executive (AAE) precision track for broad area defense against land attack cruise missiles. Aerostats are theater based systems employing advanced technologies with specific focus on to existing surveillance and tracking systems and is appropriately placed in Budget Activity 7. Acquisition Strategy: The Aerostat JPO executed a Concept Studies Phase by soliciting CMD architecture concepts that employ aerostats. The most promising concept(s), up to 2, will be carried to a subsequent phase for design and risk mitigation of the aerostat system. The government will downselect at contract award (1st Qtr FY98), at the level. Risk reduction activities are being conducted in parallel by DARPA and Other Government Agencies (OGAs) to mitigate technical and operation risk areas. Testbed Preliminary Design Review (PDR) or at the Critical Design Review (CDR). Risk reduction activities will include testbed type activities and/or testing at the component and modeling/simulation activities support the risk mitigation effort. One prototype aerostat system will be developed utilizing the design and risk mitigation effort and products.

FY 1996 Accomplishments:

4000 Established the Joint Project Office (JPO) and awarded 3 Concept Definition Contracts.

Total

FY 1997 Planned Program:

- Complete Concept Definition and initiate ACTD Risk Mitigation & Design Phase.
 - Conduct Test and Evaluation (Testbed) 1435
 - Joint Project Office. 4602
- Risk reduction program. 7701
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Project DE55

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Exhibit R-2 (PE 0102419A)





RDT&E BUDGET ITEM JUSTIFICA	TIFICATION SHEET (R-2 Exhibit)	(R-2 Exhib	it)	DATE Feb	February 1997	
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102419A Aero	ND TITLE Aerostat J	אדורנ Aerostat Joint Program Office		PROJECT DE55	5-
 FY 1998 Planned Program: 61700 ACTD Risk Mitigation & Design Contracts 18534 Risk Mitigation, Test & Evaluation, Demonstrations and exercises. 5959 Aerostat Joint Project Office. Army, Navy, and Air Force on-site and off-site costs. Total 86193 	and exercises.	ite costs.				
 FY 1999 Planned Program: 94648 Complete ACTD Risk Mitigation & Design contracts and award ACTD Development & Demo contract. 31900 Conduct Test and Evaluation (Testbed) and proof of concepts. 7750 Aerostat Joint Project Office. Army, Navy and Air Force on-site and off-site costs. Total 134298 	n contracts and award ACTD Developm I proof of concepts. and Air Force on-site and off-site costs.	velopment & Den e costs.	10 contract.			
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 BES/Pres Bud Request	26 FY 1997 33 38940 00 . 26376 00 26376	FY 1998 106592 86193	FY 1999 134940 134298			
Change Summary Explanation: Funding: FY 96 - Congressional reprogramming request (12993), Congress approved \$4000. FY 97 - Congressional reduction (-12000) during appropriation markup Futher reduction (-564) reprogrammed to higher priority programs. Schedule: Funding reductions required restructuring of the acquisition strategy. The concept d ACTD risk mitigation/design contract will be awarded in 1st qtr FY 98. The acquisis PDR, or CDR. Decision will be dependent upon maturity of technology. One protot delivered in FY02.	request (12993), Con 00) during appropriati to higher priority prog ng of the acquisition sill be awarded in 1st clent upon maturity of t	gress approved \$ on markup rams. trategy. The con- tr FY 98. The ac echnology. One p	gramming request (12993), Congress approved \$4000. ction (-12000) during appropriation markup ogrammed to higher priority programs. restructuring of the acquisition strategy. The concept definition phase will extend through 3rd qtr FY 97. contract will be awarded in 1st qtr FY 98. The acquisition strategy allows downselect at contract award, be dependent upon maturity of technology. One prototype aerostat system will be completed and	vill extend thro ws downselect em will be com	ugh 3rd qtr FY 9 at contract awar	. . .
C. Other Program Funding Summary FY 1996 Army Missile Command PE 0603009A DARPA 1000	FY 1998 FY 1999 0	9 FY 2000 0 0	FY 2001 FY 2002 0	FY 2003	To T Compl 6	Total Cost 6000
Project DE55	Page 2 of 5 Pages		Exhibi	Exhibit R-2 (PE 0102419A))2419A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIF	-ICAT	ON	SHEET	(R-2	xhib	it)			DATE	February 1997	IIV 19	97
BUDGET ACTIVITY 7 - Operational System Development			ш. —	PE NUMBER AND TITLE 0102419A Aero	ND TITLE	stat J	oint P	Aerostat Joint Program Office	m Offi				PROJECT DE55
D. Schedule Profile	FY 1996 2 3	4	_	FY 1997	4	<u>-</u>	FY 2	FY 1998	4	_	FY 1999	999	4
Program Office established Program Plan to OSD Definition Phase** OSD Review	***	×	×			× × ×	n >	· >	· >	· >	· >	× ×	
ACTD Development & Demo** Test Bed**	*	×	×	×	×	×	< ×	< ×	× ×	< ×	× ×	< × ×	××
*Efforts are/will be on-going. Will be denoted by an asterisk when completed.	asterisk when	completed	ri										
Project DF55			Page	Page 3 of 5 Pages					Exhibit	R-2 (P	Exhibit R-2 (PE 0102419A)	19A)	





RD	RDT&E PROGRAM ELEMENT	SRAM EL		PROJECT	COSTB	REAKD	BREAKDOWN (R-3)	3)	DATE	February 19	1997
BUDGET ACTIVITY 7 - Operational System Development	Il System De	velopmen	ıt		PE NUMBER AN 0102419A		tat Joint F	ס זוזו∟E Aerostat Joint Program Office)ffice		PROJECT DE55
A. Project Cost Breakdown Product Development & Risk Mitigation	r <mark>eakdown</mark> nt & Risk Mitiga	ıtion		FY 1996 2598	딥	FY 1997 21130	FY 1998 80234	FY 1999 126548	01.00		
Program Management	ont .			1402		4602	5959	7750			
Total				4000		26376	86193	134298			
B. Budget Acquisition History and Planning Information	tion History and	I Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Product Development Organizations	ent Organizatio	ns									
H&R	C/CPFF	30 Sep 96	2000	2000	0	999	1334				2000
Lockheed Martin	C/CPFF	30 Sep 96	2000	2000	0	999	1334				2000
Northrop Grum	C/CPFF	30 Sep 96	2000	2000	0	999	1334				2000
OGA	MIPR			4872			4872				4872
ACTD Risk Mit/	C/CPAF	3 Nov 97	117600	0	0	0	0	26000	53700	7900	117600
Design - TBD											
OGAs	MIPR			27600				5700	18900	3000	27600
Dev & Demo TBD	C\CPAF	Jul 99		257048					22048	23500	45548
Support and Management Organizations	gement Organiz	rations									
Aerostat JPO				44401		1402	4602	5959	7750	24688	44401
Support Contracts	C/CPFF	TBD		29465		009	3120	4000	2000	16745	29465
SBIR/STTR				644			644				644
Test and Evaluation Organizations	n Organizations	-									
OGAs	MIPR			103551	0	0	7701	8534	20900	66416	103551
Test Bed - TBD				13435	0	0	1435	0009	0009	0	13435
Government Furnished Property: None	shed Property:	None									
Project DE55				Pas	Page 4 of 5 Pages	es		Exhi	Exhibit R-3 (PE 0102419A)	0102419A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST B	REAKDO	JWN (R-	3)	DATE	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102419A Aero	AND TITLE	PE NUMBER AND TITLE 0102419A Aerostat Joint Program Office	rogram C			PROJECT DE55
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996	FY 1996 1998 2002 4000	FY 1997 8874 8366 9136 26376	FY 1998 61700 9959 14534 86193	FY 1999 94648 12750 26900 134298	Budget to Complete 34400 41433 66416 142249	Total 201620 74510 116986 393116
Project DE55	Page 5 of 5 Pages	S		Exh	Exhibit R-3 (PE 0102419A)	0102419A)	

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RDT&E BUDGET ITEM JU	TEM JUS	TIFICA.	TION S	STIFICATION SHEET (R-2 Exhibit)	8-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ıt		PE NI 020 Sys	PE NUMBER AND TITLE 0203726A Adva System	TITLE Advanced	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	tillery Ta	ıctical Da	ıta	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	36973	38512	39039	34939	25536	3345	3488	626	0	531776
D322 AFATDS Development	36973	33735	34354	30951	23816	3345	3488	979	0	513339
D2ET AFATDS Operational Test	0	4777	4685	3988	1720	0	0	0	0	18437

of close support, counterfire, interdiction, suppression of enemy air defense and deep operations. AFATDS will automatically implement detailed commander's guidance in support assets (mortars, close air support, naval gunfire, attack helicopters, offensive electronic warfare, field artillery cannons, rockets and guided missiles) in the execution the automation of operational planning, movement control, targeting, target value analysis and fire support planning. These projects support development of a replacement System (ABCS) architecture in support of close, rear and deep operations, fire planning and the coordination and employment of all service/combined fire support assets to support command, control and communications (C3) system. As a battle management system, AFATDS will provide automated fire support in the Army Battle Command complement the commander's scheme of maneuver. AFATDS will accomplish this by providing fully automated support for planning, coordination and control of all fire A. Mission Description and Budget Item Justification: The Advanced Field Artillery Tactical Data System (AFATDS) will broaden and modernize the US Army fire system for the Initial Fire Support Automated System (IFSAS) systems and are appropriately funded in Budget Activity 7.

Page 1 of 9 Pages

Exhibit R-2 (PE 0203726A)

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RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit) DATE Febru	February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data	PROJECT D322
	System	

COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D322 AFATDS Development	36973	33735	34354	30951	23816	3345	3488	626	0	513339
A. Mission Description and Justification: Project D322 - AFATDS Development: The project is composed of a common suite of hardware [Army Tactical Command and Control System (ATCCS) Common Hardware/Software (CHS)] employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. Both hardware and software will be capable of being tailored to perform the fire support command, control and coordination requirements at any level of command. This will permit variable command and control relationships and full fire support functionality at all echelons of field artillery and maneuver, from corps to battery or company in support of all levels of conflict. The Marine Corps will also utilize AFATDS. AFATDS will interoperate with Navy and Air Force Command and Control weapon systems as well as the German fire support system (ADLER), the	t D322 - AF oftware (CH in the form of dination requery and mar avy and Air	ATDS Deve S)] employe of a software irrements at a teuver, from Force Comm	lopment: T d in varying -driven, aute any level of corps to bat	'ATDS Development: The project is composed of a common suite of hardware [Army Tactical Comma 1S)] employed in varying configurations at different operational facilities (or nodes) and unique system of a software-driven, automated network. Both hardware and software will be capable of being tailored uirements at any level of command. This will permit variable command and control relationships and funeuver, from corps to battery or company in support of all levels of conflict. The Marine Corps will also Force Command and Control weapon systems as well as the German fire support system (ADLER), the	composed on at differe ork. Both ha This will per any in supposed any in supposed as systems as	of a common and operation ardware and mit variable ort of all leve	suite of har al facilities (software wil command ar els of conflice	tware [Arm; or nodes) an libe capable and control refer to The Mari support systems	y Tactical Conduction of unique system of being tailationships and the Corps with	mmand tem ored to nd full I also

Acquisition Strategy: AFATDS software will be developed in incremental releases. The previously identified software versions have been redesignated as AFATDS '97, AFATDS Releases '97, '98 and '99, previously identified as Version 2, will add additional functions, providing automated capabilities for 73% of the required tasks '98, '99 and '00 to better reflect the current plan to release increments of software functionality in each program year. AFATDS '96, previously named Version 1, received Materiel Release 13 Dec 96. It automates 51% of the required tasks including fire support planning, target nomination, order of fire, and meteorological/survey operations. including fire support sensor planning and additional munitions. Completion of AFATDS '00, previously identified as Version 3, will result in automation of all the required tasks to meet the objective system, including full fire support planning, target acquisition support and field artillery mission support. Additionally, the completed software will utilize the Army Common Operating Environment (ACOE) architecture.

French fire support system (ATLAS) and British fire support system (BATES).

FY 1996 Program:

Conduct Army Systems Acquisition Review Council (ASARC) (Milestone III	Continue AFATDS '97 and '98 software development	
300	36673	36973
•	•	Total

FY 1997 Planned Program:

10089 800 12011	Complete AFATDS '97 and Support Testing	Prepare for AFATDS '97 Operational Testing	1 Continue AFATDS '98 software development
	10089		12011
	•	•	•

Initiate AFATDS '99 software development 10024

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) 811 33735

Project D322 Total

1295

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Item 136 Exhibit R-2 (PE 0203726A)





RDT&E BUDGET ITEM JUS	STIFICATION SHEET (R-2 Exhibit)	ON SH	EET (R	-2 Exhi	bit)		DATE Fek	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER 0203726 System	PE NUMBER AND TITLE 0203726A Adva System	пт <u>ге</u> idvanced	l Field A	rtillery Ta	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System		PROJECT D322
FY 1998 Planned Program: 10356 Complete AFATDS '98 and Support Testing 800 Prepare for AFATDS '98 Operational Testing 18004 Continue AFATDS '99 software development 5194 Initiate AFATDS '00 software development Total 34354	eg ng ent t								
 FY 1999 Planned Program: 10573 Complete AFATDS '99 and Support Testing 800 Prepare for AFATDS '99 Operational Test 19578 Continue AFATDS '00 software development Total 30951 	g ent								
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 35420 35778 1195	FY 1997 34564 33735	<u>7 1997</u> 34564 33735	FY 1998 4570	FY 1999 2980	<u>1999</u> 2980			,
FY 1998 Pres Bud Request	36973	33	33735	34354	30951	51			
Change Summary Explanation: Funding: FY98 increased (+29784) for software development IAW Army Cost Position as directed by Acquisition Decision Memorandum. FY99 increased (+27971) for software development IAW Army Cost Position as directed by Acquisition Decision Memorandum. Schedule: Subsequent AFATDS releases development moved up from post FYDP to FY00 completion Technical: Not applicable	oment IAW Ar ment IAW Ar wed up from p	my Cost P my Cost P oost FYDP	osition as d osition as d to FY00 cc	irected by A irected by A ompletion	cquisition I	Decision Mer Decision Mer	norandum. norandum.		
C. Other Program Funding Summary	EW 1007	1000	1000	0000 784	TOOC AND	0000 181		To .	Total
OPA - B28600 31730 Spares (BA9708/MA9708/BS9708) 256			37491 2467	38899 2848	40729 2824	43372 3028	41926 2740	Compl 144495 8100	Cost 472078 27314
Project D322	q	Page 3 of 9 Pages	Pages			Exhibi	Exhibit R-2 (PE 0203726A)	.03726A)	

RDT&E BUDGET ITEM JUST	JUSTIFICAT	TIFICATION SHEET (R-2 Exhibit)	-2 Exhibi	it)	DATE February 1997	v 1997
вирсет астічіту 7 - Operational System Development		PE NUMBER AND TITLE 0203726A Adva System	пт. dvanced F	ield Artillery	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	PROJECT D322
D. Schedule Profile	9661 A	FY 1997	,	FY 1998	,	
ASARC - Mile III Begin Fielding Total Force Release AFATDS '97 Multi Service OT Release AFATDS '98 Release AFATDS '99	£ *X	1 2 3	4 ×× -		4 X Z	£ ×
*Milestone Complete						
Project D322		Page 4 of 9 Pages		ĒX	Exhibit R-2 (PE 0203726A)	6A)
		1207				Item 136

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RDT	RDT&E PROGRAM ELEMENT	RAM ELI	EMENT/PR	/PROJECT COST BREAKDOWN (R-3)	COST B	REAKD(OWN (R-	3)	DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	System De	velopmen			PE NUMBER ANI 0203726A System	PE NUMBER AND TITLE 0203726A Advar System	nced Field	ЭТІТІЕ Advanced Field Artillery Tactical Data	ractical E		PROJECT D322
A. Project Cost Breakdown Software Development Support Contracts	akdown nt			FY 1996 29846 2411	됩	EY 1997 27374 1486	FY 1998 29195 1615	FY 1999 25465 1580			
In-House Support GFE Test and Evaluation SBIR/STTR				2495 1043 1178	,	1695 2269 100 811	1739 1076 729	1712 2021 173			
B. Budget Acquisition History and Planning Information	on History and	Planning Info	rmation	61606		00/0	34334	16606			
Performing Organizations Contractor or Contr Government Meth	ations Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total					District	É
Vehicle Product Development Organizations	Vehicle		EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Dudget to Complete	I otal Program
HDC (prev. MX)	SS/CPAF	27 Apr 90 FY 01		208664 39876	121270	27291	24578	23886	11639	25179	39876
Various, MX BOA STRICOM/FSATS	MIPR	FY 87	34891 12092	34891 12092	34891 12092					0	34891
COE/ATCCS SED	MIPR MIPR		11460	11460 8201	5560 3564	1500	2000	1200	1200	992	11460
NRAD (USMC/NAVY)				244		244					244
ADCCS SBIR/STTR	MIPR	FY95		2200	2200		811			0	2200
Support and Management Organizations CSC/ARC C/CPFF Dec PROGRAM	ement Organiz C/CPFF	ations Dec 92	12214	12214	<i>LL</i> 69	1545	006	856	938	968	12214
MANAGEMENI: PM FATDS					16494	1589	763	787	191	828	21228
Project D322				Page	Page 5 of 9 Pages	S		Exhil	Exhibit R-3 (PE 0203726A)	0203726A)	
											, , , ,

RDT&E PROGRAM ELEMENT/P	SAM ELE	MENT/PR	ROJECT	COSTB	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development	relopment			PE NUMBER 020372(System	PE NUMBER AND TITLE 0203726A Advar System	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	Artillery	Tactical D		PROJECT D322
Contractor or Contract Government Method/Type Performing Activity or Funding Vehicle MATRIX Misc. Contracts CECOM Test and Evaluation Organizations OPTEC MISC. (Ft. Hood) MIPR Government Furnished Property	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996 13920 70351 5924 2334	FY 1996 906 866 157 1021	FY 1997 932 586 100	EY 1998 952 657	FY 1999 945 642 173	Budget to Complete 938 620	Total Program 18593 73722 6081
Item Description Description Dat Product Development Property LCU, TCU, PSE Support and Management Property: None Test and Evaluation Property TEST HARDWARE	Award or Obligation <u>Date</u> None	Delivery Date		Total Prior to FY 1996 32433	FY 1996 1043	FY 1997 2269	FY 1998 1076	FY 1999 2021	Budget to Complete 1197	Total Program 40039
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				212010 107742 26299 346051	30889 4906 1178 36973	30454 3181 100 33735	30271 3354 729 34354	27486 3292 173 30951	27368 3282 625 31275	358478 125757 29104 513339
Project D322			Pay	Page 6 of 9 Pages 1299	2.S		Exh	Exhibit R-3 (PE 0203726A)	0203726A)	Item 136



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	1-2 Exhi	bit)		DATE Fet	February 1997	766
BUDGET ACTIVITY 7 - Operational	вир бет Асті vіт У 7 - Operational System Development			PE NU 020 Sys	PE NUMBER AND TITLE 0203726A Adva System	TITLE Advanced	Field Ar	tillery Ta	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System		PROJECT D2ET
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2ET AFATDS Operational Test	tional Test	0	4777	4685	3988	1720	0	0	0	0	18437
A. Mission Descrip evaluation of the Ad Category (ACAT) I: software releases in I typical user troops tr. Project D2ET is restr	A. Mission Description and Justification: Project D2ET - Operational Test: The project finances the direct costs of planning and conducting operational testing and evaluation of the Advanced Field Artillery Tactical Data System (AFATDS) by the Operational Test and Evaluation Command (OPTEC). AFATDS is an Acquisition Category (ACAT) I system which passed the Initial Operational Tests and Evaluation (IOTE) in FY 95. Follow on Operational Tests (OTs) are planned for AFATDS software releases in FY 97, FY98, FY99 and FY00. Operational Testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2ET is restructured from within this PE (0203726A) and is not a new start.	t D2ET - Op Data System Operational Operational PTEC provid	erational T (AFATDS) (ests and Ev Testing is c es Army lea	est: The proby the Operal aluation (IO) onducted undership with w start.	oject finance ational Test 7TE) in FY 9 der condition an independ	ss the direct of and Evaluati and Evaluati 55. Follow ons, as close a dent test and	costs of plan on Comman n Operation is possible, t evaluation c	ning and cor d (OPTEC). al Tests (OT. o those enco	nducting oper AFATDS is s) are planne untered in ac uss and suital	rational test s an Acquiss d for AFAT stual comba	ing and tion 'DS t with system.
Acquisition Strategy: Not Applicable.	y: Not Applicable.										
FY 1996 Program:	FY 1996 Program: Project not funded in FY 96										
FY 1997 Planned Program:	rogram: Conduct AFATDS '97 IOTE testing Evaluate AFATDS '97 IOTE test results Complete IOTE unit (Test Players) preparation and conduct of AFATDS '97 IOTE Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	esting test results yers) prepara search/Small	tion and cor Business Te	iduct of AF/	ATDS '97 IC	OTE R/STTR)					
FY 1998 Planned Program:	rogram: Conduct AFATDS '98 Operational Test Evaluate AFATDS '98 OT test results Complete OT unit preparation for AFATI	_	86, SQ								

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Project D2ET

Exhibit R-2 (PE 0203726A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATIO	N SHEET	R-2 Exhib	oit)	DATE	February 1997	1997
вирсет астіvіту 7 - Operational System Development		PE NUMBER AND TITLE 0203726A Adva System	D TITLE Advanced	Field Artille	PE NUMBER AND TITLE 0203726A Advanced Field Artillery Tactical Data System	Data	PROJECT D2ET
FY 1999 Planned Program:							
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 0	FY 1997 4933 4777	FY 1998 4868	FY 1999 4149			
FY 1998 Pres Bud Request	0	4777	4685	3988			
C. Other Program Funding Summary: Not Applicable.							
D. Schedule Profile FY 1996		FY 1997		У 199		4 199	
Multi Service OT (AFATDS '97) AFATDS '98 OT AFATDS '99 OT	4	C C	4 X	2	4 ×	2	4 ×
Project D2ET	Page	Page 8 of 9 Pages			Exhibit R-2 (PE 0203726A)	0203726A)	
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RDT&E PROGRAM ELEMENT/PRO	/PROJECT COST BREAKDOWN (R-3)	T BREAKE	OWN (R	(-3)	DATE F 6	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER 0203720 System	SAN SAN	anced Fiel	ס πווב Advanced Field Artillery Tactical Data	Tactical D		PROJECT D2ET
A. Project Cost Breakdown Operational Test and Evaluation SBIR/STTR Total	<u>FY 1996</u> 0	EY 1997 4660 117 4777	FY 1998 4685 4685	EV 1999 3988 3988	6/8 8		
B. Budget Acquisition History and Planning Information: Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None	Project Total Office Prior to EAC FY 1996	to 96 FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Support and Management Organizations: None Test and Evaluation Organizations OPTEC SBIR/STTR	3267	0 29	4660	4685	3988	1710	18310
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	3267 3267	57	4777	4685	3988	1710	18427
Project D2ET	Page 9 of 9 Pages	Pages		Exh	Exhibit R-3 (PE 0203726A)	3203726A)	

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	RDT&E BUDGET ITEM JUST	EM JUS		TION SE	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	197
BUDC 7	BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203735A Com	TITLE Compat V	ehicle Im	proveme	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	rams	
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	206625	206816	136520	69443	27384	6586	26714	111211	Continuing	Continuing
рет	Bradley A3 IOTE	0	2013	5771	3154	0	0	0	0	0	10938
רטבם	D2UT Abrams IOTE	0	1415	0	0	0	0	0	0	0	1415
D280	Recovery Vehicle Improvement Program	2925	3051	0	0	0	0	0	0	0	53807
D330	Abrams Improvement	40691	69749	33287	6421	2982	3973	9923	34805	Continuing	Continuing
D344	Fire Support Team Vehicle	21993	17915	7920	8974	2106	0	0	0	0	72881
D371	Bradley Base Sustainment Program	115758	87753	69494	33989	1012	1008	0	0	0	447164
D377	Bradley A3 P3I (BFV A4)	0	0	0	0	0	0	15185	74793	Continuing	Continuing
D392	Armored Gun System Improvements	9861	0	0	0	0	0	0	0	0	9861
D718	Ground Combat Vehicles HTI	0	11651	2009	2012	16039	1010	1004	1003	0	34728
DC64	DC64 TRACTOR DUMP	15397	13269	18039	14893	5245	595	602	610	0	68650

provides combat effectiveness enhancements for the Abrams Tank through a series of product improvements to the current M1A2 production vehicles. Additional improvements allow the M1A2 SEP tank to operate effectively with the M2A3 Bradley. This PE also addresses future product improvements to the M2A3. These projects system upgrades, and addresses needed evolutionary enhancements to tracked combat (Abrams, Bradley) and tactical (Recovery Vehicle, Bradley FIST) vehicles. This PE Mission Description and Budget Item Justification: This Program Element (PE) responds to vehicle deficiencies identified during Desert Storm, continues technical support development of upgrades to current production vehicles and are appropriate to Budget Activity 7.

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Exhibit R-2 (PE 0203735A)

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RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	Ŧ		PE NI 020	PE NUMBER AND TITLE 0203735A Com	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle In	nprovem	ent Prog		PROJECT D2TT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2TT Bradley A3 IOTE	0	2013	5771	3154	0	0	0	0	0	10938

A. Mission Description and Justification: This project provides for the initial operational test and evaluation (IOTE) of Bradley A3 prototypes and pre-production vehicles in order to generate a system performance profile in support of a Milestone III decision. Critical areas for test include command and control, lethality, survivability, mobility, and sustainability.

Acquisition Strategy: Not Applicable

FY 1996 Accomplishments: Program not funded in FY 1996

FY 1997 Planned Program:

- 1964 Testing Support (Limited User Test (LUT) 1)
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 49
 - Total 2013

FY 1998 Planned Program:

- 5771 Testing Support (LUT 2)
 - Total 5771

FY 1999 Planned Program:

- 3154 Testing Support (Initial Operational Test and Evaluation (IOTE))
 - Total 3154

B. Project Change Summary

FY 1999 5880

FY 1998 4315

2079 2013

FY 1997

3154

5771

2013

- FY 1997 President's Budget Appropriated Value
 - Adjustments to Appropriated Value FY 1998 President's Budget Request

Project D2TT

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUST	T ITEM JU	STIFICAL	FION SE	HEET (R	IIFICATION SHEET (R-2 Exhibit)	oit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	ment		PE NU 020	PE NUMBER AND TITLE 0203735A Com	ם דודוב Combat Vehicle Improvement Programs	ehicle Im	proveme	ent Prog	rams	PROJECT D2TT
Change Summary Explanation: Funding: 1456 increase in FY 98 due to movement of WTCV funds to RDTE IAW OSD/DA LRIP funding policy. 2726 decrease in FY 99 due to reprogramming of funds to higher priority Army programs.	e to movement of e to reprogrammi	WTCV funds	to RDTE 1A higher prior	W OSD/DA	\ LRIP fundii ograms.	ng policy.				
C. Other Program Funding Summary Bradley Base Sustainment (G80717)	FY 1996	FY 1997 172296	FY 1998 118325	FY 1999 328409	FY 2000 366648	FY 2001 445709	FY 2002 376194	FY 2003 388939	To Compl Cont'd	Total Cost Cont'd
D. Schedule Profile LUT 1 LUT 2 IOTE	FY 1996 1 2 3	3 E 4	1 2 F	FY 1997 2 3	4 ×	FY 1998	8 E X		FY 1999 2 3 X	4
Project D2TT			Page 3 of 29 Pages	9 Pages			Exhibil	Exhibit R-2 (PE 0203735A)	(203735A)	
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RDT&E BUDGET I	ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICA	FION SE	HEET (F	2-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE NI 020	PE NUMBER AND TITLE 0203735A Com	ππ.Ε Sombat \	ehicle In	nprovem	ΣΤΙΤ <u>LE</u> Combat Vehicle Improvement Programs		PROJECT D2UT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2UT Abrams IOTE	0	1415	0	0	0	0	0	0	0	1415
A. Mission Description and Justification: This project funds planning and the procurement of a parts support package for 4 M1A2 SEP tank proto D330). The prototypes will participate in a combined arms war game whose main purpose is to demonstrate the operational effectiveness of the first furthe Bradley Infantry Fighting Vehicle. This is commonly referred to as the M2A3 Initial Operational Test & Evaluation (IOT&E) [See Project D2TT].	project funds ned arms war imonly referr	planning and game whose	the procure main purpo 12A3 Initial	ment of a pa se is to demo Operational	onstrate the Test & Eva	package for operational e luation (IOT	4 M1A2 S ffectiveness &E) [See Pa	planning and the procurement of a parts support package for 4 M1A2 SEP tank prototypes (See Project game whose main purpose is to demonstrate the operational effectiveness of the first fully digital version of ed to as the M2A3 Initial Operational Test & Evaluation (IOT&E) [See Project D2TT].	otypes (See) ully digital v	Project ersion of
Acquisition Strategy: Not Applicable										
FY 1996 Accomplishments: Program not funded in FY 96	in FY 96									
FY 1997 Planned Program:	.esearch/Smal	l Business T	echnology T	ransfer (SBI	R/STTR) Pi	ograms				
FY 1998 Planned Program: Program not funded in FY 98	in FY 98		à							
FY 1999 Planned Program: Program not funded in FY 99	in FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996		FY 1997 1460 1415	FY 1998 969	FY 1999 0	99 0			
Adjustments to Appropriated Value FY 1998 President's Budget Request		0		1415	0		0			
Change Summary Explanation: Funding: FY 98 (-969) decrease reflects movement of funding to Project D330 Abrams Improvements.	ovement of f	unding to Pro	iject D330 A	Abrams Impr	ovements.					
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compi	Total Cost
Abrams Improvement Program (D330)	40691	69749	33287	6421	2982	3973	9923	34805	Con't	Con't
Project D2UT			Page 4 of 29 Pages	9 Pages			Exhibi	Exhibit R-2 (PE 0203735A)	203735A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203735A Combat Vehicle	Combat Vehicle Improvement Programs D2UT
D. Schedule Profile FY 1996	FY 1997	66
Procure parts support package Test site preparation Bradley IOT&E Participation	X X X X X X X X X X X X X X X X X X X	3 4 1 2 3 4 X X X
Project D2UT	Page 5 of 29 Pages	Exhibit R-2 (PE 0203735A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	īt		PE NI 020	PE NUMBER AND TITLE 0203735A Com	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle In	nprovem	ent Progr		PROJECT D280
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D280 Recovery Vehicle Improvement Program	2925	3051	0	0	0	0	0	0	0	53807

towing capability, and hydraulic assisted brakes. The boom has a 35 ton lift capacity. The main winch has a constant pull capability of 70 tons. There is an additional 3 ton recovery vehicle configured with an A-frame boom, two winches, and a spade. The HERCULES has a 1050 HP engine, an improved transmission to handle the additional A. Mission Description and Justification: The M88A2 Improved Recovery Vehicle (IRV), also known as the HERCULES, is an armored, full-tracked, diesel-powered auxiliary winch which is used to deploy the main winch. The hull is armored for protection against small arms fire, artillery fragments, and anti-personnel mines. The vehicle has a .50 caliber machine gun mounted for self-protection. The M88A2 IRV is capable of performing recovery, evacuation, and limited repair of the main battle tank. The HERCULES is currently migrating from the Engineering, Manufacturing and Development Phase with Low Rate Initial Production (LRIP) to Full Rate Production (FRP), with a Milestone III decision scheduled for 2097.

Acquisition Strategy: All development and production contract actions are on a sole source basis to United Defense Limited Partnership.

FY 1996 Accomplishments:

1268 Completed Initial Operational Test & Evaluation
636 Completed Electronic Data Development (TDP)
165 Integrated Electronic Tech Manual Development
841 Integrated Logistic Support Development
15 Program Management
Total
2925

FY 1997 Planned Program:

- 1664 Refurbishment of Test Vehicles
- 1300 Depot Maintenance Work Requirements (DMWR) Development
 - 13 Program Management
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
 - otal 3051

FY 1998 Planned Program: Program not funded in FY 98

FY 1999 Planned Program: Program not funded in FY 99

Page 6 of 29 Pages Project D280

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFIC	S NOITA:	HEET (R	-2 Exhib	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development		PE N 02(PE NUMBER AND TITLE 0203735A Com	inte combat V	ehicle Im	proveme	D ТІТLE Combat Vehicle Improvement Programs		PROJECT D280
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY	FY 1996 FY 3000 3085 -160 2925	FY 1997 3116 3051 0 3051	FY 1998 0	FY 1999 0	0 0 0			
C. Other Program Funding Summary GA0570 Improved Recovery Vehicle (M88 Mod) GE0171 Spares (Initial) M88E1	FY 1996 FY 1997 54363 55687 1615 299	297 <u>FY 1998</u> 5687 28601 299 833	FY 1999 40229 1051	FY 2000 59702 1260	FY 2001 73974 978	FY 2002 87084 1631	FY 2003 109808 1628	To Compl Con't Con't	Total Cost Con't Con't
D. Schedule Profile Award LRIP level III Provisioning Spares and Repairs Definitize Initial Production release TDP and Packaging Definitize LRIP Option - 15 Veh Definitize LRIP Option - 14 Veh Begin IOT&E End IOT&E Milestone III Decision First Unit Equipped (FUE) * Milestone Completed	FY 1996 2 3 4 X* X* X* X* X*	- * <u>*</u>	FY 1997 2 3 X X	-	FY 1998	80 E	- L	FY 1999 · 3	4
Project D280		Page 7 of 29 Pages	29 Pages			Exhibil	Exhibit R-2 (PE 0203735A)		





RDT&E PROGRAM ELEMENT/P	PROJECT	COSTE	REAKD	COST BREAKDOWN (R-3)	3)	DATE F.	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AN 0203735A		oat Vehicle	ਹ ਸਸ∟E Combat Vehicle Improvement Programs	nent Prog		PROJECT D280
A. Project Cost Breakdown Initial Operational Test and Evaluation Electronic Data Development Integrated Electronic Tech Manual Development Integrated Logistic Support Development Test Vehicle Refurbishment Depot Maintenance Work Requirement (DMWR) Development Program Management SBIR/STTR Total	EY 1996 1268 636 165 841 15		FY 1997 1664 1300 13 74 3051	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
United Defense SS-CPFF Various N/A York, PA TACOM		39075	2451	2964				44490
Warren, MI Other Support and Management Organizations	·		50					50
PMO/TACOM Warren, MI Other Government		1507	15	13				1535
SBIR/STTR Test and Evaluation Organizations		1	ì	74				74
APG, MD	ı	3498	26					5554
Project D280	Fag	Page 8 of 29 Pages	ses		Exhic	oit R-3 (PE	Exhibit R-3 (PE 0203735A)	

RDT&E	PROGE	SAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST B	REAKDO	JWN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	tem Dev	elopment	Į.		PE NUMBER AND TITLE 0203735A Com	SAND TITLE	at Vehicle	D TITLE Combat Vehicle Improvement Programs	nent Prog		PROJECT D280
Contractor or Contract Government Method/ Performing or Fundii Activity Vehicle TACOM Warren, MI	t Type ing	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996 542 931	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 542 999
Government Furnished Property: None	roperty: N	one									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nent agement on				39075 1785 6971 47831	2786 15 124 2925	2964 87 3051			·	44825 1887 7095 53807
Project D280	j			Pag	Page 9 of 29 Pages	S2.		Exhi	Exhibit R-3 (PE 0203735A)	0203735A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	8-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	•		PE NI 020	PE NUMBER AND TITLE 0203735A Com	ππιε combat V	ehicle In	provemo	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs		PROJECT D330
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D330 Abrams Improvement	40691	69749	33287	6421	2982	3973	9923	34805	34805 Continuing Continuing	Continuing

A. Mission Description and Justification: This project funds improvements to the Abrams Main Battle Tank (M1 series) which began production in 1979. Its mission is to close with and destroy enemy forces on the integrated battlefield using firepower, maneuver, and shock effect. The current production model, the M1A2, is the Army's first fully digital ground combat system. The first Army unit was equipped with M1A2 tanks in October 1995. The M1A2 System Enhancement Program (SEP) is the name given to the latest group or "block" of improvements funded under this project. SEP is an upgrade to the and a new open operating system. An Under Armor Auxiliary Power Unit (UAAPU) is being developed for production in order to mitigate power demands on the batteries so that all systems may operate without turning on the main engine. A new thermal management system will dissipate the heat generated by the electronic components. The M1A2's formidable target acquisition capabilities will also be significantly enhanced with the development for production of the 2nd Generation Forward Looking Infra-Red (2nd Gen FLIR) technology. Both the Gunner's Primary Sight (GPS) and the Commander's Independent Thermal Viewer (CITV) will be modified to integrate the computer core that is the essence of the M1A2. It provides better microprocessors, color flat panel displays, more memory capacity, better Soldier-Machine Interface (SMI), improved thermal imaging capabilities of the new FLIR technology.

The first M1A2 SEP tank is scheduled for production at the end of FY1999. The M1A2 SEP tank will be capable of running the Army's Common Operating Environment (ACOE) software for digital communication with the rest of the combined arms team. Its computer systems will also accommodate future growth through FY2003 without significant hardware changes. The Army plans to develop and incorporate a series of target acquisition, fire control, and survivability enhancements which will bridge the gap between the Abrams Main Battle Tank (M1A2 SEP) and the Future Combat System (PE 63645, Project DQ19)

contractor developing the FLIR sights, which the Government will provide to General Dynamics. The cost plus fixed fee contract with General Dynamics was awarded on Acquisition Strategy: General Dynamics Land Systems Division (GDLS) is the prime contractor for this development program. Texas Instruments, Inc. is the principal

FY 1996 Accomplishments:

- Completed SEP/2nd Gen FLIR Critical Design Review (CDR); Continued development and began manufacturing SEP (GDLS) and FLIR (TI) prototypes; GDLS also began Direct Support Electrical System Test Set (DSESTS) efforts with sub-contractor Pentastar
 - Provided Government Support / Government Furnished Equipment (GFE)

Total

Project D330

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Exhibit R-2 (PE 0203735A)

RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (I	R-2 Exhibi	(t)	DATE February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	n Development	PE NUMBER AND TITLE 0203735A Com	тпсе Combat Vel	⊃ π⊓∟E Combat Vehicle Improvement Programs		PROJECT D330
FY 1997 Planned Program: 60200 Continue of and Contract	ogram: Continue development, prototype fabrication and complete component testing; Evaluate M1A2 compatibility with ACOE and continue Command and Control (C2) integration efforts Begin testing of hardware/software on tank Provide Government Support/GFE Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	ie component testing inology Transfer (SE	; Evaluate M1A	2 compatibility with ams	ACOE and continue Cor	nmand
FY 1998 Planned Program:	ogram: Complete fabrication and assembly of demonstration hardware, continue logistics, quality and other concurrent engineering development efforts Continue testing of hardware/software on tank Provide Government Support/GFE	dware, continue log	stics, quality and	l other concurrent en	gineering development e	fforts
FY 1999 Planned Program:	ogram: Complete logistics, quality and other concurrent engineering developmental efforts, and finalize documentation Complete testing of hardware/software on tank Provide Government Support/GFE	ing developmental e	fforts, and finali	ze documentation		***************************************
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	a	FY 1997 70046 69749	FY 1998 32415	FY 1999 1933		
Fr 1998 rresident s budget kequest Change Summary Explanation: Funding: FY 99 +4488 incre	ase reflects funding added to	40091 09/49 5328 initiate pre-planned product improvements.	3328/ ovements.	6421		
Project D330	Pa	Page 11 of 29 Pages		Exhibi	Exhibit R-2 (PE 0203735A)	
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RDT&E BUDGET ITEM JUS		TIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhi	bit)		DATE Feb	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development		PE NI 020	PE NUMBER AND TITLE 0203735A Com	пте ombat V	ehicle Im	proveme	TITLE Combat Vehicle Improvement Programs	sms	PROJECT D330
C. Other Program Funding Summary Abrams IOTE (D2UT) Abrams Upgrade Program (GA0750) Abrams Vehicle Modification (GA0700) M1A2 Training Devices (GB1302) Training Device Mod (GA5208) Initial Spares (GE0161)	FY 1996 FY 1997 0 1415 565132 463872 50094 63157 6133 12590 3017 3181 16045 9281	1997 FY 1998 1415 0 3872 594856 3157 29843 2590 13351 3181 2222	EY 1999 0 690984 30070 13850 6440	FY 2000 0 670723 23894 8527 2784 10298	FY 2001 0 505264 68786 11236 5703	FY 2002 0 292352 107084 12646 5937	FY 2003 0 357267 129766 13070 5965	To Compl O Con't Con't Con't Con't Con't	Total Cost 1415 Con't Con't Con't Con't Con't
D. Schedule Profile Program Milestones Preliminary Design Review (PDR) - X* SEP/2nd Gen FLIR Critical Design Review (CDR) - SEP/2nd Gen FLIR PDR - Software CDR - Software Preliminary Mfg TDP Complete Begin Government/Contractor Testing Complete Government/Contractor Testing Contract Completion * Milestone Completed	FY 1996 2 3 4 X*	*	FY 1997 2 3 X X X	1	FY 1998	8 E	H 2 ×	FY 1999	4 ×
Project D330		Page 12 of 29 Pages	19 Pages			Exhibit	Exhibit R-2 (PE 0203735A)	03735A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	LEMENT/PI	ROJECT (COST B	REAKD	DWN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ent		PE NUMBER AN 0203735A		at Vehicle	ОТITLE Combat Vehicle Improvement Programs	nent Prog		PROJECT D330
A. Project Cost Breakdown GDLS Contract		FY 1996 24574	E	FY 1997 53000	FY 1998 13000	FY 1999			
Texas Instruments Contract		8000		7200	2000	0			
Government/Contractor Testing		445		3900	12169	1900			
Government Support/GFE		7672		3945	6118	1521			
SBIR/STTR				1704					
Total		40691	•	69749	33287	6421			
B. Budget Acquisition History and Planning Information	Information								
Performing Organizations									
Contractor or Contract									
	Performing	Project	Total					,	
Performing or Funding Obligation	n Activity	Office	Prior to					Budget to	Total
Activity Vehicle Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Product Development Organizations									
Contracts		472549	472549						472549
GDLS SS-CPFF Sep 94		127000	17190	24574	53000	13000	3000	Con't	110764
Texas Instruments C-CPAF Jul 94		25030	7830	8000	7200	2000	0	Con't	25030
McKinney, TX									
Note: FY 95 and FY 96 GDLS SEP contract efforts partially funded by 0203758A/D374	rts partially funded	by 02037584/1	D374						
anag									
PMO / TACOM MIPR			32221	2617	3245	2000	1021	Con't	41104
				1	1				
GFE / IACOM MIPR SBIR / STTR				2022	1704	4118	200	Con't	10373
Test and Evaluation Organizations								100	10/1
TECOM MIPR			29675	445	3900	12169	1900	Con't	48089
Government Furnished Property None									
Subtotal Product Development			497569	32574	60200	15000	3000		608343
Subtotal Support and Management			32221	7672	5649	6118	1521		53181
Subtotal Test and Evaluation			29675	445	3900	12169	1900		48089
Total Project			559465	40691	69749	33287	6421		709613
Project D330		Page	Page 13 of 29 Pages	ges		Exhi	Exhibit R-3 (PE 0203735A)	0203735A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA-	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	760
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203735A Com	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle In	nprovem	ent Progr		PROJECT D344
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D344 Fire Support Team Vehicle	21993	17915	7920	8974	2106	0	0	0	0	72881

Lasing Teams in our heavy divisions. BFIST allows fire support operations to be performed on the battlefield in vehicles with the same signature, survivability, and mobility as other of Bradley maneuver units. This program supports material development and conversion of selected Bradley A2 Operation Desert Storm (ODS) based upgrades and A. Mission Description and Justification: The Bradley Fire Support (BFIST) vehicle program integrates Mission Equipment Packages (MEP) into a Bradley Fighting Vehicle and supports heavy maneuver force operations. BFIST replaces the aging M981 Fire Support Vehicle allowing for fire support teams and Combat Observation Bradley A3 vehicles to the BFIST configuration. The A2 ODS based BFIST is designated M7 and the A3 based BFIST designated M7A1.

Low Rate Initial Production (LRIP) and Full Rate Production contracts with options will follow successful milestone decisions. Follow-on Phase II focuses on the A3 based Acquisition Strategy: The BFIST program is executed in two-phases: Phase I converts Bradley A2 ODS platforms to the M7 BFIST configuration and Phase II converts Bradley A3 platforms to the M7A1 BFIST configuration. A Phase I Cost Plus Incentive Fixed Fee (CPIF), Engineering and Manufacturing Development (EMD) contract through full and open competition requires design and fabrication of four (4) BFIST prototypes for pre-production/user testing. Sole Source/Firm Fixed Price (SS/FFP) BFIST (M7A1) with CPFF EMD, LRIP. Full Rate Production contracts will be awarded for development and production of the Bradley BFIST.

FY 1996 Accomplishments:

17623 Phase I Design Engineering
1310 Phase I Prototype Manufacturing
3060 Program Management
Total 21993

FY 1997 Planned Program:

- 12213 Phase I Design Engineering 104 Phase I Prototype Manufacturing
 - 1000 Phase II Design Engineering
 - 4160 Program Management
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 438

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Project D344

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEM JUST	FICATI	ON SH	EET (R	-2 Exhi	bit)		DATE Fe	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development	ment		PE NUI 0203	PE NUMBER AND TITLE 0203735A Com	riπ∟E ombat V	ehicle In	provem	ЭТІТІЕ Combat Vehicle Improvement Programs	,	PROJECT D344
FY 1998 Planned Program: 1052 Phase I Design Engineering 972 Phase II Prototype Manufacturing 1989 Phase II Design Engineering 1701 Program Management 2206 3 LRIP IOTE vehicles Total 7920	ring ufacturing ering									
FY 1999 Planned Program:	ering ufacturing									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 22559 23192	EY 1997 20398 17915	<u>Y 1997</u> 20398 17915	FY 1998 3818	FY 1999	0 0			
FY 1998 President's Budget Request		21993	17	17915	7920	8974	74			
Change Summary Explanation: Funding: 4102 increase in FY98 due to movement of WTCV funds to RDTE IAW OSD/DA LRIP funding policy. FY99 increase to support continued M7A1 development.	to movement of WTC	CV funds to	RDTE IA	W OSD/DA	LRIP fundi	ng policy. I	Y99 increa	ise to support	continued	M7A1
C. Other Program Funding Summary	7 2001 77	1 1007 Y	1000	0001	0000 134	200			To	Total
GZ2300 FIST Vehicle (M7/M7A1)			14656	16169 16169	29286 29286	36626 36626	51650 51650	FY 2003 64140	378409	Cost 590936
D. Schedule Profile	FY 1996	4	FY 1	FY 1997 2 3	4	FY 1998	38	,	FY 1999	4
Phase I Preliminary Design Review Critical Design Review	*X *X							•		
Project D344		Pa	Page 15 of 29 Pages	9 Pages			Exhib	Exhibit R-2 (PE 0203735A)	203735A)	
			£ + C +							Itom 127





RDT&E BUDGET ITEM JUSTIFICAT	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997
System Development	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	PROJECT PROGRAMS D344
FY 1996 1 2 3	FY 1997 FY 1998	99
First A2 ODS BFIST Prototype Pre-Production Verification Test C/G Limited User Test #1 LRIP Contract Award Phase II Contract Award Critical Design Review Pre-Production Verification Test C/G * Milestone Completed	×	
Project D344	Page 16 of 29 Pages	Exhibit R-2 (PE 0203735A)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM EL	EMENT/PF	ROJECT	COST B	REAKD	OWN (R-	3)	DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	evelopmer	ıt		PE NUMBER AN 0203735A	PE NUMBER AND TITLE 0203735A Comb	at Vehicle	ртите Combat Vehicle Improvement Programs	nent Prog		PROJECT D344
A. Project Cost Breakdown Phase I Design Engineering Phase I Prototype Manufacturing Phase II Design Engineering Phase II Prototype Manufacturing Program Management LRIP IOTE Vehicles SBIR/STTR Total			FY 1996 17623 1310 3060	.	FY 1997 12213 104 1000 4160 438 17915	FY 1998 1052 1989 972 1701 2206	FY 1999 5526 930 2518			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Vehicle Date EA	d Planning Inf Award or Obligation Date	formation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
UDLP C/CPIF Jun 95 UDLP SS/CPIF Mar 9 UDLP SS/FFP Oct 97 Support and Management Organizations:	Jun 95 Mar 97 Oct 97 zations:		48484	11499	3060	11917 1000	1052 2961 2206 1701	0 6456 1993	0 1515 591	43401 11932 2206 12752
SBIR/STTR Test and Evaluation Organizations: ATC/TECOM Government Furnished Property: None	s: None					438		525		438
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				11499 2474 13973	18933 3060 21993	12917 3371 1627 17915	6219 1701 7920	6456 1993 525 8974	1515 591 2106	57539 13190 2152 72881
Project D344			Page	Page 17 of 29 Pages	zes		Exhi	Exhibit R-3 (PE 0203735A)	0203735A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ī		PE NI 020	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	TITLE Compat V	ehicle In	nprovem	ent Progi		PROJECT D371
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D371 Bradley Base Sustainment Program	115758	87753	69494	33989	1012	1008	0	0	0	447164

awareness, enhanced lethality and survivability, and supportability/sustainability improvements. This project funds engineering and manufacturing development (EMD) of A. Mission Description and Justification: The Bradley A3 program upgrades a proven, tracked combat vehicle with digital command and control, increased situational packages (command and control, navigation, communications, fire control, system/component diagnostics, and embedded training capabilities), 2nd Gen FLIR, and other the Bradley A3. The effort develops and fully integrates digital electronics featuring a 1553 databus core electronic architecture and upgraded vehicle system software systems/components into renovated (overhauled) Bradley A2s. Current plans call for conversion of 1602 Bradley A2s to the Bradley A3 configuration.

Plus Incentive Fee (CPIF) contract for development and integration of advanced A3 systems and components. Ten principal subcontractors, comprising approximately 33% Acquisition Strategy: Milestone II/IV for the Bradley A3 was held in FY94 and the program was approved for EMD. United Defense was subsequently awarded a Cost of the contract cost, are participating in the EMD work effort. The first of eight prototypes was completed in 4QFY96; six prototypes are currently undergoing contractor and government production qualification testing. A Low Rate Initial Production (LRIP) decision is planned for 3QFY97. Live Fire and Limited User Testing will follow the LRIP decision.

FY 1996 Accomplishments:

- 87590 Continue Design Engineering Effort
 - 20620 Began Prototype Manufacturing
 - 7548 Project Management
 - Total 115758

FY 1997 Planned Program:

- 69081 Continue Design Engineering Effort
 - 4688 Continue Prototype Manufacturing
- Begin Production Qualification Testing (PQT) and Contractor Test Support; begin Live Fire Testing 5150
 - 6690 Project Management
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 2144
- otal 87753

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUST	IFICAT	HS NOI	EET (R	-2 Exhi	bit)		DATE Febi	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ıt		PE NU	PE NUMBER AND TITLE 0203735A Com	mile ombat V	ਹ ਸਸ∟E Combat Vehicle Improvement Programs	roveme	ant Progra		PROJECT D371
 FY 1998 Planned Program: 58689 Continue Design Engineering Effort 579 Complete Prototype Manufacturing Effort 6455 Continue Live Fire Testing; Continue Production Qualification Testing; Begin Production Verification Testing (PVT) 3771 Project Management Total 69494 	g Effort cturing Effort Continue Produ	rction Quali	fication Test	ing; Begin	Production	Verification T	esting (PV'	Œ		
FY 1999 Planned Program: 23413 Continue Design Engineering Effort 9144 Complete Live Fire, PQT, and PVT Testing 1432 Project Management Total 33989	g Effort nd PVT Testing	D D								
B. Project Change Summary FY 97 President's Budget Appropriated Value		FY 1996 114638 117858		FX 1997 87135 87753	FY 1998 61952	FY 1999 32115				
Adjustments to Appropriated value FY 98 President's Budget Request		115758		87753	69494	33989				
Change Summary Explanation: Funding: 7542 increase in FY 98 due to digitization plus-up. 1874 increase in FY 99 due to digitization plus-up.	igitization plus- gitization plus-	.dp.								
C. Other Program Funding Summary	FY 1996	FV 1997	FV 1998	FY 1999	FV 2000	FV 2001	FV 2002	FV 2003	To	Total
G80717 Bradley Base Sustainment GE0163 Spares (Initial) BFVS G20900 Bradley FVS Training Devices	5198	172296 9297 572	118325 298 1417	328409 1464 9544	36648 1873 21019		376194 4088 4772	388939 4080 3425	Con't Con't Con't	Con't Con't Con't
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	1	FY 1998	4	- F	FY 1999	4
Critical Design Review X* Software Critical Design Review X*			1)	•					•
Project D371			Page 19 of 29 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0203735A)	03735A)	
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RDT&E BUDGET ITEM JUS	STIFICATIC	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it)	DATE Fek	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Com	Combat Ve	hicle Impro	отпте Combat Vehicle Improvement Programs		PROJECT D371
				FY 1998		66	
First A3 Prototype PQT-Government Live Fire Test and Evaluation	3 X* X X X X X X X X X X X X X X X X X X		4	2	4	3	4
LRIP IPR LRIP Award (Phased Awards) Limited User Test #1	τ.	××	××	×	×		
Froduction verification resumg (FV1) - Government Limited User Test #2			<	×			
* Milestone Completed							
		Page 20 of 20 Pages			Evhihit R.2 (DE 02037354)	2037354)	
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		7777					

RDT&E PR	RDT&E PROGRAM ELEMENT/	EMENT/PF	ROJECT	COSTE	REAKD	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	260
BUDGET ACTIVITY 7 - Operational System Development	n Developmer			PE NUMBER AN 0203735A	PE NUMBER AND TITLE 0203735A Comk	oat Vehicle	רוזער ב Combat Vehicle Improvement Programs	nent Prog		PROJECT D371
A. Project Cost Breakdown Design Engineering Prototype Manufacture Testing Project Management SBIR/STTR Total			EY 1996 87590 20620 7548	E	FY 1997 69081 4688 5150 6690 2144 87753	FX 1998 58689 579 6455 3771 69494	EY 1999 23413 0 9144 1432 33989			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performi Performing or Funding Obligation Activ Activity Vehicle Date EA	y and Planning Inf	formation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations United Defense CPIF /	zations Aug 95	302900	302900	80119	85115	54086	43900	14600		277820
Texas Instruments SS/CPIF McKinney, TX	Feb 94	62800	64200	35782	17562	7710	1100	0		62154
Other Contracts SBIR/STTR Support and Management Organizations:	ganizations:			9585	5533	11973 2144	14268	8813	2020	52192
PMO PM CCAWS Other Test and Evaluation Organizations:	tions:			1936 8421 2307	1914 4522 1112	1700 4500 490	1675 1706 390	1277		8502 19149 4454
TECOM Government Furnished Property: None	rty: None					5150	6455	9144		20749
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	ent			125486 12664	108210 7548	75913 6690 5150	59268 3771 6455	23413 1432 9144	2020	394310 32105 20749
Total Project Project D371			Page	138150 1 Page 21 of 29 Pages	115758 ges	87753	69494 Exhil	4 33989 2020 Exhibit R-3 (PE 0203735A)	2020 203735A)	447164
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	t.		PE NI 020	PE NUMBER AND TITLE 0203735A Com	ттге Sombat V	ehicle In	nprovem	D203735A Combat Vehicle Improvement Programs		PROJECT D392
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D392 Armored Gun System Improvements	9861	0	0	0	0	0	0	0	0	9861

significantly increasing lethality and survivability of the AGS. The use of a common 2nd GEN FLIR will increase force effectiveness by allowing all host platforms to "see A. Mission Description and Budget Item Justification: This project supports the engineering efforts associated with integration of the 2nd GEN FLIR into the Armored Gun System (AGS). The 2nd GEN FLIR will increase target detection, recognition and identification at night or through smoke, fog and other battlefield obscurants the same battlefield". Additional benefits will be realized through procurement economies of scale, common training and reduced logistics burden.

Acquisition Strategy: The AGS program was terminated. The funding in FY 1996 pays for work accomplished prior to stop of work and efforts associated with program termination.

FY 1996 Planned Program:

Engineering/Manufacturing Development 9861

Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

FY 1997 FY 1998 FY 1999 0 0			0 0 0
FY 1996 FY 1 16269	16727	-6408	9861
B. Project Change Summary FY97 President's Budget Request	Appropriated Value	Adjustments to Appropriated Value	FY 1998 President's Budget Request

Change Summary Explanation:

Funding: In FY 1996 (-6408) funds reprogrammed to higher priority requirements.

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Exhibit R-2 (PE 0203735A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICAT	ION SE	IEET (R	-2 Exhi	bit)		DATE Feb	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development			PE NL 020	PE NUMBER AND TITLE 0203735A Com	ombat V	ehicle In	proveme	D TITLE Combat Vehicle Improvement Programs		PROJECT D392
C. Other Program Funding Summary		100	900						To	Total
64710/DL69 HTI 2nd GEN FLIR ED 23735/D330 Abrams 2nd GEN FLIR	28584 23998	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	Compl	Cost
D. Schedule Profile: All efforts have been put on hold due to program termination	hold due to prc	gram term	ination							
Project D392		I	Page 23 of 29 Pages	9 Pages			Fxhibit	Exhibit R-2 (PF 02037354)	037350)	
			1275							Itom 127

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	SOSTB	REAKD	OWN (R-	3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Com	AND TITLE	at Vehicle	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	nent Prog		PROJECT D392
A. Project Cost Breakdown Prototype Design & Fabrication Total	FY 1996 9861 9861	FY	FY 1997 0	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Night Vision Labs MIPR MAR 96 9861 United Defense CPIF TBD TBD Support and Management Organizations Not Applicable Test and Evaluation Organizations Not Applicable	9861 TBD		9861					9861
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation			9861					1986
Total Project			9861					9861
Project D392	Page 2	Page 24 of 29 Pages	es		Exhit	Exhibit R-3 (PE 0203735A)	0203735A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA.	TION SI	HEET (R	k-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE NI 020	PE NUMBER AND TITLE 0203735A Com	PE NUMBER AND TITLE 0203735A Combat Vehicle Improvement Programs	ehicle In	provem	ent Progr		РRОЈЕСТ D718
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D718 Ground Combat Vehicles HTI	0	11651	2009	2012	16039	1010	1004	1003	0	34728

A. Mission Description and Budget Item Justification: This project encompasses two efforts which will provide increased survivability/offensive capability to multiple ground combat platforms. Current efforts include the Suite of Survivability Enhancement System (SSES) and the Field Emissive Display (FED) programs.

Initially, AN/AVR-2A Laser Warning Receivers, currently in production for Army aviation platforms, will be modified for ground vehicle use. In addition, a Commander's obscure our vehicles and jam, decoy or deflect enemy munitions. The first phase of the SSES program will field Laser Warning Receivers (LWR) to Bradley A3 vehicles. countermeasures. The next phase of the SSES program will field Missile Warning Receivers to Bradley A3 vehicles. Additional phases of this program are contemplated countermeasures to Army ground combat vehicles. SSES will protect Army vehicles by providing advance warning of attack and activating countermeasures which will Decision Aid (CDA) will be developed that will integrate current and future sensors and countermeasures to provide manual, semiautomatic and automatic activation of The SSES program is a Horizontal Technology Integration (HTI) effort to develop, produce and apply an integrated suite of common electronic sensors and which will provide additional countermeasures to the suite, and field the suite to other vehicles.

opportunity to improve the performance of system displays for combat and combat support vehicles, both tracked and wheeled. The high performance FED program takes requirements of ground systems. System display performance specifications will optimize industry standard interfaces allowing incremental and inexpensive upgrades for The FED program is an effort to develop common, multi-purpose displays for Army ground combat vehicles. This includes the capability for real time interpretation and application of command and control, target imagery and situation awareness information. The FED will also provide common, multi-purpose, high performance (low power, color, sunlight readable, high resolution) system displays. The application of the FED supports the Force XXI Battle Command - Brigade and Below (FBCB2) advantage of advanced display technologies under development by the Defense Advanced Research Projects Agency (DARPA) by incorporating changes to meet the operational requirement for the display of common imagery and data in removable and remote operations. In doing so, this program focuses on the near to mid-term future information display requirements.

As additional HTI projects are established in the SSES area, they will be added to and funded under project D718.

Acquisition Strategy: Follow on to existing contracts for RDTE with follow on Full and Open Competition for Production.

FY 1996 Accomplishments: The SSES effort was funded under PE 0604740A, Project D661, Tactical Surveillance System

FY 1997 Planned Program:

- Build and evaluate FED prototype and prepare a common, multi-purpose display performance specification (FED)
- 194 Program and Technical Support (FED)

Project D718

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICATION	SHEET (R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203735A Com	ם דודנב Combat Ve	hicle Impro	D TITLE Combat Vehicle Improvement Programs	PROJECT D718
 FY 1997 Planned Program: (continued) 2997 Develop A Kit and verify LWR specifications (SSES) 1000 Build CDA software (SSES) 684 Program Management/Technical Support (SSES) 285 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Total 11651 	ns (SSES) SSES) Business Technolc	ogy Transfer (S	BIR/STTR)			
 FY 1998 Planned Program: 509 Complete vehicle Software Integration Lab test (SSES) 800 Begin vehicle test (SSES) 300 Continue Bradley integration (SSES) 300 Program and Technical Support (SSES) 100 Design High Perf FED for SSES for legacy systems (SSES) Total 	test (SSES)					
 FY 1999 Planned Program: 1243 Complete vehicle tests (SSES) 569 Program and Technical Support (SSES) 200 Continue design support for FED for SSES in legacy systems (SSES) Total 2012 	in legacy systems ((SSES)				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 0 0 0 0	FY 1997 0 11651 0 11651	FY 1998 0 2009	FY 1999 0 2012		
Change Summary Explanation: Funding: FY 97 Congressional increase (6700 for FED, 4951 for LWR) FY 98 and FY 99 increases due to initiation of SSES program Project D718	f SSES program	VR) :am : Page 26 of 29 Pages			Exhibit R-2 (PE 0203735A)	

RDT&E BUDGET ITEM JUST	EM JUS	LIFICAT	HS NOL	FIFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Feb	February 1997	26
BUDGET ACTIVITY 7 - Operational System Development			PE NU 020;	PE NUMBER AND TITLE 0203735A Com	TTLE ombat Ve	ehicle Imp	rovem	D TITLE Combat Vehicle Improvement Programs		PROJECT D718
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
GZ2400 Bradley Mod (SSES portion) G80717 Bradley Sustainment (MDEP FPSC)					13100	13100	11500 3753	10300 10334	Compl Con't Con't	Con't Con't
D. Schedule Profile	FY 1996	4	F)	FY 1997	-	FY 1998	~	 	FY 1999	*
Develop A kit (SSES) Verify LWR Spec (SSES) Build CDA software (SSES) Complete SIL test (SSES) Field Test (SSES) MS III (SSES) Common Display Perf Spec (FPD) * Milestone Completed			× × ×		- - ××			- × .		* ×
Project D718		Ĭ,	Page 27 of 29 Pages	9 Pages			Exhibi	Exhibit R-2 (PE 0203735A)	03735A)	
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RD	RDT&E PROGRAM ELEMENT/	GRAM EL		PROJECT (COST B	REAKD	COST BREAKDOWN (R-3)	-3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	al System D	evelopmer	ıt.		PE NUMBER AN 0203735A		oat Vehicl	Э ТІТLE Combat Vehicle Improvement Programs	nent Pro		PROJECT D718
 A. Project Cost Breakdown Integration to develop A kit (SSES) CDA Development and LWR Specifications Verification SSES User's and Vehicle test and Logistics (SSES) Program and Technical Management (SSES) FED Performance Demonstration/verification test (FPD) FED Common display Perf Spec (FPD) SBIR/STTR Total B. Budget Acquisition History and Planning Information 	reakdown lop A kit (SSES) and LWR Speci test and Logistic iical Managemer Demonstration/v lay Perf Spec (F	ffications Verifications Verifications (SSES) at (SSES) erification test (PD)	ication SSES (FPD)	FY 1996	FY	FY 1997 1882 2115 0 684 6327 358 285 11651	FY 1998 509 1100 0 300 100	FY 1999 0 351 1092 469 100			
Performing Organizations Contractor or Contract Government Method/Type / Performing or Funding (Activity Vehicle I Product Development Organizations	izations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Hughes (SSES) UDLP LWR/CDA Spec Dev SSFS	Prod/FFP CPIF	Feb 97 Feb 97	2477 4572	2477 4572			1773	573 1036	131		2477 4572
MCRON (FPD) UDLP (FPD) Camber (FPD) GDLS (FPD) GDLS (SSES) TBD(Full/Open	Cost/Share CPIF CPIF CPIF CPIF	Jan 97 Jan 97 Feb 97 Feb 97 Fan 00	22800 1390 225 1525 50 19056	22800 1390 225 1525 50 19056			6327 140 45 25 50	100	100	19056	6527 140 45 25 25 50 19056
Support and Management Organizations PM GSI (SSES) MIPR Feb 9 PM GSI (FPD) MIPR Jan 97 CECOM (SSES) MIPR Feb 9 TARDEC (SSES) MIPR Feb 9	gement Organi MIPR MIPR MIPR	zations Feb 97 Jan 97 Feb 97 Feb 97					434 148 200	200 50 50	369		1003 148 300 100
Project D718				Page	Page 28 of 29 Pages	es		Exhit	oit R-3 (PE	Exhibit R-3 (PE 0203735A)	

RD	RDT&E PROGRAM ELEMENT/P	RAM ELI	EMENT/PR	OJECT	COST B	REAKDO	ROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	997
ВUDGET ACTIVITY 7 - Operational System Development	I System Dev	velopmen	1		PE NUMBER AND TITLE 0203735A Com	SAND TITLE	D TITLE Combat Vehicle Improvement Programs	Improve	ment Prog		PROJECT D718
Contractor or Contract Government Method/Type Awar Performing or Funding Oblig Activity Vehicle Date SBIR/STTR Test and Evaluation Organizations None	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u> None	Performing Activity EAC	Project Office EAC.	Total Prior to FY 1996	FY 1996	FY 1997 285	FY 1998	FY 1999	Budget to Complete	Total Program 285
Government Furnished Property: None	ished Property: }	Vone									,
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	evelopment Id Management						10584 1067	1709	1543	19056	32892 1836
Total Project							11651	2009	2012	19056	34728
0.170								i			
Project D/18				Fage	rage 29 of 29 rages	şes		Exh	Exhibit R-3 (PE 0203735A)	0203735A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE NI 020	PE NUMBER AND TITLE 0203740A Maneuver Control System	ritle Naneuver	Control	System			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	48302	27888	25641	23932	18012	7202	0	0	8435	564835
DC49 Standard Theater Army Command and Control System (STACCS)	13458	0	0	0	0	0	0	0	0	133832
D2HT MCS Operational Test	4729	3772	0	0	0	0	0	0	0	8839
D484 Maneuver Control System	30115	24116	25641	23932	18012	7202	0	0	8435	422164

portions of war plans are feasible. Using STACCS foundation applications and additional software functionality developed under the Army World Wide Military Command MCS Operational Test, will support planned Initial Operational Test & Evaluation (IOT&E) of MCS. Project D484, Maneuver Control System (MCS), automates command systems. Project DC49, Standard Theater Army Command and Control System (STACCS) is the foundation for the Army Global Command and Control System (AGCCS), Mission Description and Budget Item Justification: This program element funds the evolutionary software development integration and testing of command and control and Control System (WWMCCS) Information System (AWIS) and the United States Commander-in-Chief Europe (USCINCEUR) Command and Control System (UCCS), functionality that currently exists within the Army's inventory or is currently under development and are therefore appropriately included in Budget Activity 7. Beginning systems will dramatically improve the Army's ability to analyze courses of action; develop and manage Army forces supporting joint war plans; and ensure that the Army the AGCCS will provide a layered architecture and functional best of breed software applications to develop a totally integrated component of the GCCS. Project D2HT, information needs of commanders for quicker decisions and application of battlefield resources. MCS provides standardized message sets, acquires commander's critical accomplished through a selection of the Army's "best of breed" command and control functionality for inclusion in the Joint GCCS. The AGCCS-developed software and control (C2) functions previously performed manually. It provides secure, automated assistance to the Operations Staff (G3/S3) and other key staff to meet the which is the Army component system that directly supports the implementation of the Joint Global Command and Control System (GCCS). This support is being information requirements, and displays status screens and battlefield graphics. These projects involve the development, enhancement, and integration of software in FY 1997 the Project DC49, STACCS became the AGCCS Project DC86 and moved to PE 0303150A, also in Budget Activity 7.

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Exhibit R-2 (PE 0203740A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE FeI	February 1997	760
BUDGET ACTIVITY 7 - Operational System Development	t.		PE NI 020	PE NUMBER AND TITLE 0203740A Maneuver Control System	ritle Naneuver	. Control	System			PROJECT DC49
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC49 Standard Theater Army Command and Control System (STACCS)	13458	0	0	0	0	0	0	0	0	133832

selection of the Army's best of breed command and control functionality. The AGCCS-developed software systems will dramatically improve the Army's ability to analyze Control System (UCCS), the AGCCS will provide a layered architecture and functional best of breed software applications to develop a totally integrated component of the A. Mission Description and Justification: Project DC49 - STACCS: This project is the Army component system that directly supports the implementation of the Joint courses of action; develop and manage Army forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. The Army has identified the foundation applications and additional software functionality developed under the Army WWMCCS Information System (AWIS) and the USCINCEUR Command and Standard Theater Army Command and Control System (STACCS) as the foundation for the Army Global Command and Control System (AGCCS). Using STACCS Global Command and Control System (GCCS). This support is being accomplished through the Army's Global Command and Control System (AGCCS) which is a Global Command and Control System.

Acquisition Strategy: The AGCCS software integration and development effort is a 5 year RDTE incrementally funded completion effort. A hybrid (Cost-Plus-Award Fee include conversion of existing products to GCCS and development of the Common Operating Environment (COE). Beginning with CP #3, all odd numbered CPs represent development of prime mission functionality. All even numbered CPs will be for fixes or upgrades to odd numbered CPs, if required. After delivery and testing of each new development, software maintenance and relocation/de-installation of the test facility. The development strategy includes 10 Capability Packages (CPs). CPs #1 and #2 and Firm-Fixed-Price) contract was awarded to Martin Management and Data Systems (MM/MDS) in December 1994. The contract consists of software functionality (CPs 3,5,7,9) it will be determined if system upgrades (CPs 4,6,8,10) are needed.

A common hardware platform will be used within the Army to implement AGCCS/GCCS. This will include products from the Army's Common Hardware/Software (CHS II) contract and will include equipment and basic Commercial off the Shelf (COTS) software packages. The COTS hardware and software will provide machines with expanded processing, storage and communications capability as well as office-automation and management software.

FY 1996 Accomplishments:

- 1835 Performed Systems Engineering
- 7749 Continued Prime Mission Software Development Capability package #5
- 612 Performed Data Engineering
- 3262 Conducted Systems Test and Evaluation Capability Packages #2 and #3

otal 13458

FY 1997 Planned Program: Project restructured to PE 030150A, project DC86.

Project DC49

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Exhibit R-2 (PE 0203740A)







RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	A JUSTIFICATI	ION SHEET (F	-2 Exhit	oit)	DATE Fe	February 1997	7(
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203740A Mane	TITLE Naneuver	D TITLE Maneuver Control System		F. O	PROJECT DC49
FY 1998 Planned Program: Project restructured to PE 030150A, project DC86.	030150A, project DC8	.91					
FY 1999 Planned Program: Project restructured to PE 030150A, project DC86.	030150A, project DC						
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 13805 13944 -486 13458	FY 1997 0	FY 1998 0	FY 1999 0			
C. Other Program Funding Summary Procurement OPA-2 BA8250 Std Theater Army Cmd & Contr System	FY 1996 FY 1997 15254	FY 1998 FY 1999	$\mathrm{FY}2000$	FY 2001 FY 2002	2 FY 2003	To Compl	Total Cost 28262
D. Schedule Profile F CCCS Block 1 Completed X*	FY 1996 2 3 4	FY 1997	4	FY 1998 2 3	4	FY 1999 2 3	4
*Milestone Complete - Milestones continued under PE 0303150A	303150A						
Project DC49	P	Page 3 of 13 Pages		Ext	Exhibit R-2 (PE 0203740A)	203740A)	
		7001				ı	Itom 120

RDT&	E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST B	REAKDO	DWN (R-	3)	DATE F6	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ystem De	velopmen	it		PE NUMBER AND TITLE 0203740A Mane	AND TITLE	uver Cont	PE NUMBER AND TITLE 0203740A Maneuver Control System			PROJECT DC49
A. Project Cost Breakdown Systems Engineering Prime Mission - Software Development Data Engineering System Test and Evaluation Total	<u>tdown</u> re Developme tion	ant		FY 1996 1835 7749 612 3262 13458	210	FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	History and	Planning Inf	ormation								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	ations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TRW-W C/CPFF Jul 87 TRW-E C/CPAF Mar 87 LMC C/CPAF/FFP Dec 94	It Organization C/CPFF C/CPAF C/CPAF/FFP	Jul 87 Mar 87 Dec 94	102239 TBD	102239 TBD	102239 2461 14145	11674					102239 2461 25819
Support and transgement Organiz Test and Evaluation Organizations MITRE C/FFP	Organizations C/FFP	Oct 92	2329	2329	1529	800					2329
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle Product Development Property	led Property Contract Method/Type or Funding Vehicle tt Property	Award or Obligation <u>Date</u>	Delivery <u>Date</u>		Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Support and Management Property: None Test and Evaluation Property: None	ient Property roperty: Non	7: None				984					984
Project DC49				Page	Page 4 of 13 Pages	S		Exhi	Exhibit R-3 (PE 0203740A)	0203740A)	



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RDT&E PROGRAM ELEMENT/P	PROJECT COST BREAKDOWN (R-3)	(R-3)	DATE	February 1997	760
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Maneuver Control System	Control Syster			PROJECT DC49
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY 1996 118845 12658 1529 800 120374 13458	997 FY 1998	FY 1999	Budget to Complete	Total Program 131503 2329
Project DC49	Page 5 of 13 Pages	Ë	Exhibit R-3 (PE 0203740A)	0203740A)	
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RDT&E BUDGET ITEM JUST	FM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	160
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE NI 020	PE NUMBER AND TITLE 0203740A Mane	D203740A Maneuver Control System	Control	System			PROJECT D2HT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2HT MCS Operational Test	4729	3772	0	0	0	0	0	0	0	8839

A. Mission Description and Justification: Project D2HT - MCS Operational Test: The project finances the direct costs of planning and conducting operational testing and evaluation of the Maneuver Control System (MCS) by the Operational Test and Evaluation Command (OPTEC). MCS is an Acquisition Category (ACAT) 1D system conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an with Operational Testing and Evaluation to be conducted in FY 97 via an Initial Operational Test and Evaluation (IOT&E). Operational testing is conducted under independent test and evaluation of effectiveness and suitability of the system.

Acquisition Strategy: Not Applicable

FY 1996 Accomplishments:

MCS V12 IOT&E preparation 2929

MCS V12 instrumentation

1800 Total

FY 1997 Planned Program:

Conduct MCS V12 Limited User's Test (LUT) 3298 382

Evaluation of MCS V12

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) 92

Total

FY 1998 Planned Program: Project not funded in FY 1998

FY 1999 Planned Program: Project not funded in FY 1999

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	4841	3895	0	0	
Appropriated Value	4888	3772			
Adjustments to Appropriated Value	-159				
FY 1998 Pres Bud Request	4729	3772	0	0	
				•	
Project D2HT	Pag	Page 6 of 13 Pages			Exhibit R-2 (PE 0203740A)

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	M JUSTIFICAT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203740A Maneuver Control System	
C. Other Program Funding Summary: Not Applicable	able		
D. Schedule Profile 1 MCS V12 IOT&E Preparation X*	FY 1996 2 3 4	FY 1997 FY 1998 1 2 3 4 1 2 3 X*	FY 1999 4 1 2 3 4
*Milestone Complete			
Project D2HT	I	Page 7 of 13 Pages	Exhibit R-2 (PE 0203740A)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	PROJECT (SOST BE	REAKD	DWN (R-	3)	DATE Fe	February 1997	26
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203740A Mane	AND TITLE	uver Cont	D TITLE Maneuver Control System			PROJECT D2HT
A. <u>Project Cost Breakdown</u> Operational Test and Evaluation SBIR/STTR Total	FY 1996 4729 4729	FY	1997 3680 92 3772	FY 1998 0	FY 1999 0			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Bevelonment Organizations: None	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Support and Management Organizations. None Test and Evaluation Organizations Misc. Allot OEC Allot SBIR/STTR		338	0 4554 175	0 3300 380 92			0 0 0	338 7854 555 92
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		338	4729	3772				8839
Project D2HT	Page	Page 8 of 13 Pages	53		Exhit	Exhibit R-3 (PE 0203740A)	0203740A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	ţ		PE N 020	PE NUMBER AND TITLE 0203740A Mane	PENUMBER AND TITLE 0203740A Maneuver Control System	Control	System		.	PROJECT D484
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D484 Maneuver Control System	30115	24116	25641	23932	18012	7202	0	0	8435	422164

A. Mission Description and Justification: Project D484 - Maneuver Control System (MCS): The project satisfies an urgent need for efficient command and control of Mapping Agency map data to display friendly and enemy unit locations, control measures (e.g., boundaries, phase lines, etc.), Intelligence and Electronic Warfare graphics, tactical operations on the battlefield. MCS is the Army's tactical C2 system used in command posts from Corps to Battalion to provide automated C2 for the commander among Battlefield Functional Areas (BFAs) within each echelon. The primary component of controlling Force Level Information transactions is MCS's management of and staff at and between echelons (i.e., Force Level Control). MCS is the cornerstone of the Army Battle Command System (ABCS) and provides critical coordination common picture information. This includes information across all Battlefield Operating Systems (BOSs) consisting of the Situation Map (SITMAP) using Defense Fire Support plans, combat service support location information, air corridors and air defense weapons control information.

common picture database for all ATCCS BFAs, MCS is the gateway for Situational Awareness information received from appliqué. MCS provides the Army "ground track" MCS software is based on the Common Operating Environment (COE) standard architecture with applications to automate C2 operations. MCS uses the Terrain Evaluation with MCS's automated OPORD generating tool. MCS's report displays provide resource information roll-ups on all reporting battlefield units. In addition to serving as the organizing (graphically and textually) tactical Army units by echelon. Unit commanders and their staffs can quickly and efficiently prepare and disseminate combat orders Module (TEM) for terrain analysis, planning and SITMAP graphical displays. The Unit Task Organization (UTO) Tool provides the commander and staff a means of segment of the joint tactical common picture to the Army Global Command and Control System (AGCCS).

Acquisition Strategy: Since the initial MCS was introduced in Europe in 1981, this program has been and will continue to be, evolutionary software development, broken functionality from V12.1. Therefore technical risk associated with each version is minimized. The use of a non-developmental item (NDI) tactical computer processor out into Blocks. The MCS capability continues to expand in pre-planned, time-phased steps toward the objective system. The final block of MCS software, Block IV, hardware/software (CHS) began in FY 1989 with the initiation of the porting of software as well as the initiation of the integration of CHS into both the Standardized consists of development of Versions 12.1, 12.2 and Version 12.3, which will become the objective system. Versions 12.2 and 12.3 add applications and stand-alone enables the MCS to capitalize on state of the art ruggedized, commercial equipment and reduce life cycle costs. Commencement of the transition to common Integrated Command Post System (SICPS) and the existing Command and Control Unit vehicle.

FY 1996 Accomplishments:

- Began subsystem engineering, integration and test for the Maneuver functional areas
- 1531 Conducted Technical Test (TT)/Customer Test (CT)
- 20945 Continued MCS V12 development and integration effort
 - 2239 Horizontal Battlefield Digitization

Project D484

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Exhibit R-2 (PE 0203740A)

RDT&E BUDGET ITEM JUSTIFICAT	IFICATION SHEET (R-2 Exhibit)	R-2 Exhib		DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203740A Mane	D TITLE Maneuver (PE NUMBER AND TITLE 0203740A Maneuver Control System	PROJECT D484
FY 1996 Accomplishments: (continued)				
 FY 1997 Planned Program: 21429 Continue MCS V12 development and integration efforts 175 Support for LUT activities 1937 Horizontal Battlefield Digitization 575 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Total 24116 	; chnology Transfer (S	BIR/STTR)		
FY 1998 Planned Program:	·			
 FY 1999 Planned Program: 21916 Continue MCS V12 software development 100 Preparation for Follow On Test & Evaluation of V12.1 1916 Horizontal Battlefield Digitization Total 23932 				
ary t d Value	FY 1997 25187 24116 0	FY 1998 22938	<u>FY 1999</u> 17261	
FY 1998 Pres Bud Request Change Summary Explanation: Funding: FY 98 (+2703) Increase to maintain Block IV software development schedule. FY 99 (+6671) Increase to maintain Block IV software development schedule. Schedule: 1QFY97 IOT&E replaced by Limited User's Test. IOT&E start date to be determined	24116 Block IV software d Block IV software d ted User's Test. IOT	25641 evelopment sche evelopment sche &E start date to	23932 dule. dule. be determined	
Project D484	Page 10 of 13 Pages		Exhibit	Exhibit R-2 (PE 0203740A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IIFICA.	TION SH	IEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development			PE NU 020;	PE NUMBER AND TITLE 0203740A Mane	PE NUMBER AND TITLE 0203740A Maneuver Control System	Control	System		a D	PROJECT D484
C. Other Program Funding Summary Other Procurement, Army BA9320 Maneuver Control System MCS Spares - BS9710	FY 1996 18571 150	FY 1997 19102 0	FY 1998 15699 0	FY 1999 18324 0	FY 2000 41357 0	FY 2001 54835 0	FY 2002 666	FY 2003 669	To Compl 0 18154	Total Cost 521223 64304
D. Schedule Profile 1 Acquisition Program Baseline Approval Test & Evoluction Montes Dies Approval	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3	3 4	-	FY 1999 2 3	4
MCS Technical Test/Customer Test Award BLK IV Contr/Begin V12.1 Dev V12.01 Limited User's Test Task Force XXI Participation Begin V12.2 Software Development Begin V12.3 Software Development Follow On Test & Eval of V12.1	**	*	*				×	×		
*Milestone Complete										
Project D484			Page 11 of 13 Pages	3 Pages			Exhibit	Exhibit R-2 (PE 0203740A)	03740A)	
			1247							Item 138

RD	RDT&E PROGRAM ELEMENT/I	SRAM EL	EMENT/PF	PROJECT	COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	Il System De	evelopmen	+		PE NUMBER ANI 0203740A	PE NUMBER AND TITLE 0203740A Mane	uver Cont	D ТІТLE Maneuver Control System			PROJECT D484
A. Project Cost Breakdown Major Contracts Support Contracts	eakdown	ere en		FY 1996 22715 561	F	FY 1997 18929 682	FY 1998 20984 454	EY 1999 19022 477			
SBIR/STTR In-House Support GFE/Other Total				3633 3206 30115	7	575 3830 100 24116	3993 210 25641	4113 320 23932			
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	ormation								
Performing Organizations Contractor or Contra	izations Contract Method/Tyne	Award or	Derforming	Droiset	Total					·	
Performing Activity	or Funding Vehicle		Activity EAC	Office EAC	Prior to FY 1996	FY 1996	FV 1997	FV 1998	FV 1999	Budget to	Total
Product Development Organizations	ent Organizatio	Suc								and mos	TOBIGIN
Block IV	C/CPIF	SEP 96		63100	0	1000	9791	17000	17100	18000	63100
Other Contracts	C/CPIF/AF C/Various	VARIOUS		55048	27958	17586	7321	2000	0	0	55048
CECOM					9662	1735	1770	1823	1878	4042	19244
In-House					20843	1350	1491	1570	1605	3455	30314
Loral CPIF/CPAF NOV Support and Management Organizations	CPIE/CPAF	NOV 87			30769					0	30769
In-House	0				14847	548	569	009	630	1356	18550
Other Contracts	C/Various				15584	561	682	454	477	850	18608
Test and Evaluation Organizations	n Organization	S			,		•	,			
Other Contracts					1118	932	0 001	0 0	100	100	2250
Miscellaneous					>	7401	100	710	077	3/8	0061
SBIR/STTR	-						575				575
Project D484				Page	Page 12 of 13 Pages	zes		Exhi	Exhibit R-3 (PF 0203740A)	02037404)	
											120





RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	REAKD	OWN (R-	3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER 020374	PE NUMBER AND TITLE 0203740A Mane	PE NUMBER AND TITLE 0203740A Maneuver Control System	rol Systen			PROJECT D484
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Description Vehicle Date	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 199 <u>9</u>	Budget to Complete	Total Program
ATCCS Contr Pgm Spt Env Support and Management Property Test and Evaluation Property CHS-1 HW	7159 936 936	1232	0	0	0	0 0	7159 2168
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Miscellaneous Total Project	252549 30431 1731 284711	27032 1109 1974 30115	22190 1251 100 575 24116	24377 1054 210 25641	22505 1107 320 23932	30965 2206 478 33649	380193 37158 4813 422164
Project D484	Page 13 of 13 Pages	ges		Exhi	Exhibit R-3 (PE 0203740A)	0203740A)	

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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	197
80DG	вир вет Асті vітү 7 - Operational System Development			PE NI 020 Imp	PE NUMBER AND TITLE 0203744A Aircr Improvement Pr	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	odificati	ons/Prod	uct		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	4288	22386	2609	28791	9107	2873	4678	14954	Continuing	Continuing
D028	D028 Guardrail Common Sensor	0	0	0	0	939	1865	4678	14954	Continuing	Continuing
D179	D179 CH-47D Product Improvement	0	4602	0	0	0	0	0	0	0	4602
D430	D430 Improved Cargo Helicopter	4288	17539	2609	28791	8168	1008	0	0	31400	93803
D504	D504 UH-60 Door Gun	0	245	0	0	0	0	0	0	0	245

Mission Description and Budget Item Justification: This PE supports the CH-47 Product Improvement to upgrade T55-L-712 engines to T55-GA-714A configuration to increase power to meet lift requirements for mission needs. The Improved Cargo Helicopter (ICH) is a development program to extend useful life of the CH-47D cargo helicopter. This funding will assure heavy lift capability into the 21st century. The projects in this program element support development efforts for existing systems and are correctly placed in Budget Activity 7.

Page 1 of 12 Pages 1345

Exhibit R-2 (PE 0203744A)





RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit) DATE	February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product	PROJECT D179
	Improvement Program	

		The second secon			6					
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate		Y 2001 FY 2002 FY 2003 stimate Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D179 CH-47D Product Improvement	0	4602	0	0	0	0	0	0	0	4602
	THE REAL PROPERTY.				-					

Operational Capability (ROC). The addition of numerous engineering changes to provide safety, the latest in operational technology, and improved communications has increased the empty weight of the aircraft. Upgrade of the T55-L-712 engine to T55-GA-714A configuration will provide the capability to meet the required operational A. Mission Description and Budget Item Justification: The engine upgrade program will convert the T55-L-712 engine to T55-GA-714A configuration, increasing power to allow the aircraft to carry its primary payloads under high altitude/temperatures. The CH-47D, as configured, does not meet its existing 1975 Required capability.

Acquisition Strategy: Sole source contract for engineering changes and production contracts in FY 97.

FY 1996 Accomplishments: Project not funded in FY96.

FY 1997 Planned Program:

- Engineering Changes 4490
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total

FY 1998 Planned Program: Project not funded in FY98.

FY 1999 Planned Program: Project not funded in FY99.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	1778	0	0	C	
Appropriated Value	1796	4602		•	
Adjustments to Appropriated Value	-1796				
FY 1998 Pres Bud Request	0	4602	0	0	

Change Summary Explanation: FY 97 (+4602) Congressional increase to appropriation for CH-47 engine upgrades. FY96 (-1778) reprogrammed to higher priority

Project D179

Page 2 of 12 Pages

Exhibit R-2 (PE 0203744A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	LIFICA	TION SH	IEET (R	-2 Exhit	oit)		DATE Fet	February 1997	97
вирсет Астіvітү 7 - Operational System Development			PE NU 020;	PE NUMBER AND TITLE 0203744A Aircr Improvement Pr	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	odificatic m	ns/Prod			PROJECT D179
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To.	Total
APA AA0252 CH-47 Cargo Helicopter Mods (MYP)*		43700	49400	97600	73600	188600	172900	172300	358600	Cost 1156700
* Represents that portion of the program dedicated to CH-47 engine upgrade.	o CH-47 engi	ne upgrade.								
D. Schedule Profile	FY 1996	•	F	7 1997	•	FY 1998		,	Y 199	
Engineering Change		4	7 ×	'n	4	7	ئ 4	_	5.	4
				•						
Project D179			Page 3 of 12 Pages	2 Pages			Exhibi	Exhibit R-2 (PE 0203744A)	203744A)	
			1247							Itom 120

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RDT&E PROGRAM ELEMENT/PF	PROJECT	COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	766
вирсет Астіvітү 7 - Operational System Development		PE NUMBER ANI 0203744A Improveme	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	ਹ ਸਾਸ਼∟E Aircraft Modifications/Product ent Program	ations/Pro	P 2 10		PROJECT D179
A. Project Cost Breakdown Engineering Change SBIR/STTR Total	FY 1996	区	FY 1997 4490 112 4602	FY 1998	FY 1999	61		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Froduct Development Organizations Allied Signal SS/FP Mar 97 Support and Management Organizations SBJR/STTR Test and Evaluation Organizations: None				4490				4490
Government Furnished Property: Not Applicable								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				4490 112 4602				4490
Droinet D140	ć				i			
rioject D1/9	Fage	rage 4 of 12 rages	5.5		Exhi	Exhibit R-3 (PE 0203744A)	0203744A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operation	вирсет астіvіту 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203744A Aircr Improvement Pr	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	ons/Proc			PROJECT D430
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D430 Improved Cargo Helicopter	go Helicopter	4288	17539	2609	28791	8168	1008	0	0	31400	93803
A. Mission Descri	A. Mission Description and Justification: The Improved Cargo Helicopter (ICH) is a program to extend useful life of the CH-47D cargo helicopter. This funding assure heavy lift capability into the 21st century. This program will award a contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering Manufacturing Dayslormont (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Engineering (EMD) and its included in the contract for Eng	The Improved Cargo	o Helicopte	r (ICH) is a	program to	extend usefu	l life of the (H-47D carg	Helicopter (ICH) is a program to extend useful life of the CH-47D cargo helicopter. This funding will award a contract for Engineering Manufacturing Development (EMD) which in the desired in the desire	. This fundi	lliw gu
operation and supp and structural mod	operation and support costs through vibration reduction/airframe stiffening, incorporating a new electronics/architecture system for compatibility with the digital battlefield and structural modifications as necessary to extend the life of the airframe. This program will be the basis for establishing an overhaul, modernization, upgrade program to	tion/airframe he life of the	stiffening, i airframe. T	ncorporating his program	g a new elec	tronics/archi basis for est	tecture syste ablishing an	m for compa	atibility with	the digital b , upgrade pr	attleffeld ogram to
Acquisition Strategy:	meet tile readiness needs of the future for neavy lift capability. <u>Acquisition Strategy:</u> Sole source development contract in Engineering Manufacturing Development (FMD) stage leading to production contract in FV on	capability. ontract in Eng	gineering Ma	anufacturine	Developme	ant (EMD) st	age leading	to productio	n contract in	FV 00	
) () () () () () () () () () ()	3			0				1000
FY 1996 Accomplishments: • 583 Govern	shments: Government in-house support for studies and program planning	for studies a	nd program	planning							
377			0	C							
• 1386											
• 1415	Support of vibration analysis tests	ests									
• 177											
210		(ADS)-33 S	hudy								
90	Study on 54,000 lbs. parts life Request for Proposal (RFP) Board	nard									
Total 4288											
FY 1997 Planned Program:	Program:										
410	Technical assessment										
2500		trials									
• 500	·										
1600	Request for Proposal (RFP) Board	oard						•			
3800	PM support/matrix support										
• 8301		evelopment (EMD)								
• 428	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	search/Small	Business Te	chnology T	ransfer (SB)	R/STTR) Pro	ograms				
Total 17539							•				
Project D430				Page 5 of 12 Pages	2 Pages			Exhibi	Exhibit R-2 (PE 0203744A)	203744A)	





RDT&E BUDGET ITEM JUS	EM JUSTIFICA	TIFICATION SHEET (R-2 Exhibit)	EET (R-	2 Exhib	Ē	Ω	DATE Febr	February 1997	
BUDGET ACTIVITY 7 - Operational System Development		0203. Impre	PE NUMBER AND TITLE 0203744A Aircr Improvement Pr	PE NUMBER AND TITLE 0203744A Aircraft Mod Improvement Program	ь ππ∟E Aircraft Modifications/Product ent Program	s/Produ		PRC D4	PROJECT D430
FY 1998 Planned Program: • 2609 Engineering Manufacturing Development Total 2609	bevelopment								
FY 1999 Planned Program:	evelopment nent								
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 484 498	FY 1		FY 1998 193	FY 1999 0				
FY 1998 Pres Bud Request	3790	38 17539	39	2609	28791				
Change Summary Explanation: Funding: FY 98 (+2416) & FY 99 (+28791) increases are the result of an Army decision to extend useful life of the CH-47D, FY 96 (+3804) increase is primarily due to an internal reprogramming to put funds in correct PE (from PE 0603003A). FY 97 (+17345) Congressional increase to appropriation.	Funding: FY 98 (+2416) & FY 99 (+28791) increases are the result of an Army decision to extend useful life of the Ci FY 96 (+3804) increase is primarily due to an internal reprogramming to put funds in correct PE (from PE 0603003A). FY 97 (+17345) Congressional increase to appropriation.	(+28791) incres y due to an inter rease to appropr	ises are the i nal reprogra iation.	result of an ımming to p	Army decision ut funds in cor	to extend rect PE (fr	useful life or om PE 0603	the CH-47I 003A).	Ġ.
C. Other Program Funding Summary APA, SSN AA0254, CH-47 ICH	FY 1996 FY 1997 0 0	FY 1998 0	FY 1999 0	EY 2000 29198	FY 2001 FY 77143	FY 2002 136743	FY 2003 169039	To Compl Cont	Total Cost Cont
D. Schedule Profile 1 Programmatic Documentation	FY 1996 2 3 4 x*	FY 1997	3 4	_	FY 1998 2 3	4	FY 1	FY 1999 2 3	4
Vibration Analysis Support Engineering Manufacturing Development	×		×	M			×		
*Denotes completed effort Project D430		Page 6 of 12 Pages	ages			Exhibit R	Exhibit R-2 (PE 0203744A)	3744A)	

RDT8	E PROG	RDT&E PROGRAM ELEMENT/	EMENT/PR	COJECT	COSTE	REAKD	PROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
вирдет астіліту 7 - Operational System Development	system De	evelopmen	ţ		PE NUMBER AN 0203744A Improvement		aft Modific ogram	ס דודנב Aircraft Modifications/Product ent Program			PROJECT D430
A. Project Cost Breakdown Government in-house support for studies & program planning Programmatic documentation	kdown support for stu	ıdies & prograr	n planning	FY 1996 583		FY 1997 3800	FY 1998	FY 1999			
In Equation analysis flight tests Government support of vibration analysis flight tests Electronic architecture study	ngineering Ma it tests vibration and	nnufacturing De alysis flight test	svelopment is	1386 1415 177	10.10.5	2500	2609	5432			
Study on 54,000 lbs. parts life Request for Proposal (RFP) Board Engineering Manufacturing Development/Tech Assessment Government furnished equipment Government Testing	nts life &FP) Board nring Develop equipment	ment/Tech Ass	essment	207 06 20		300 1600 8301		21277 1266 816			
Technical assessment SBIR/STTR Total				4288		410 428 17539	2609	28791			
Acquisitio g Organiza or t	on History and ations Contract Method/Type	Planning Info	Performing	Project	Total						
g Jevelopmen	or runding <u>Vehicle</u> of Organization SS/FP	Date ns Jan 96	EAC	EAC 1117	FY 1996 186	FY 1996	FY 1997 554	FY 1998	FY 1999	Budget to Complete	Total Program 1117
WESTAR S Assurance S Technology Corp. Boeing Defense & S Space Group	SS/FP SS/FP SS/FP	Aug 96 Aug 96 Sep 96		90 177 2386		90 177 1386	1000				90 177 2386
Project D430				Pag	Page 7 of 12 Pages 1351	ses		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0203744A)	Item 139



RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	PROJECT	COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	ıl System De	velopmen	ıt.		PE NUMBER AN 0203744A	PE NUMBER AND TITLE 0203744A Aircra	off Modific	D ΤΙΤΕ Aircraft Modifications/Product			PROJECT D430
					Improv	Improvement Program	ogram				
Contractor or Government	Contract Method/Tyne	Award or	Derforming	Droing	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity Beging Defense	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Space Group	55/FF	sep 90		410			410				410
Boeing Defense &	SS/FP	Nov 97		61902			8301		21277	32324	61902
Space Group											
Support and Management Organizations	gement Organiz.	ations									
Army Aviation &				19440	409	868	5246	2609	4932	5346	19440
Troop Command											
Army Training &		Aug 96		3460		1160	1600		300	400	3460
Doctrine											
Command											
Aviation Center-											
Ft. Rucker											
Army		Nov 97		200					200	300	500
Communications											
Electronics											
Command											
Army Training &		Aug 96		200		200					200
Doctrine											
Command											
Analysis Center-Ft											•
Lee											
SBIR/STTR				428			428				428
Test and Evaluation Organizations	n Organizations					:					2
Test & Evaluation		Nov 98		775					400	375	775
Command											
Operational		Nov 98		797					416	381	797
Testing Command											
Project D430				Pag	Page 8 of 12 Pages	89		- H	Evhibit D 2 / DE 00007444	1444	
					0			LVI	שון ואיט ווח	0203/44A)	
					1757						Tt. 120

RDT&E	PROGRAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ST COST B	REAKDO	JWN (R-:	3)	DATE F	February 1997	197
вирсет Астіvітץ 7 - Operational System Development	tem Developme	nt	PE NUMBER 020374 ⁴ Improve	PE NUMBER AND TITLE 0203744A Aircraft Moo Improvement Program	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	ations/Prc			РКОЈЕСТ D430
Government Furnished Property Contract Method/Type Item Or Funding Vehicle	led Property Contract Method/Type Award or or Funding Obligation Vehicle Date	Delivery <u>Date</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total. Program
Froduct Development Froperty Support and Management Property: None Test and Evaluation Property: None	perty t Property: None erty: None						1266	1450	2716
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	tent gement in		186 409	2030 2258 4288	10265 7274	2609	22543 5432 816 28791	33774 6046 756 40576	68798 24028 1572 94398
Project D430			Page 9 of 12 Pages	ges		Exh	Exhibit R-3 (PE 0203744A)	0203744A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	STIFICA	TION SI	HEET (R	R-2 Exhi	bit)		DATE Fe	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development			PE N 020	PE NUMBER AND TITLE 0203744A Aircr improvement Pr	0203744A Aircraft Modifications/Product	lodificati	ons/Proc	luct	_	PROJECT D504
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D504 UH-60 Door Gun	0	245	0	0	0	0	0	0	0	245

A. Mission Description and Budget Item Justification: This project supports operational testing of the GAU/19.50 caliber weapon system on the Black Hawk helicopter to determine the appropriate defensive armament carried by the Army utility helicopters for self-protection and landing zone suppression during airborne assaults. This project is a new start in FY 1997.

Acquisition Strategy: Not applicable.

FY 1996 Accomplishments: Project not funded in FY96.

FY 1997 Planned Program:

- Operational test of the GAU/19.50 caliber weapon system on a Black Hawk helicopter.
 - 6 Small Business Innovative Research (SBIR) Program

Total 245

FY 1998 Planned Program: Project not funded in FY98.

FY 1999 Planned Program: Project not funded in FY99.

B. Project Change Summary FY 1997 President's Budget	FY 1996 0	FY 1997 0	FY 1998 0	FY 1999 0	
Appropriated Value Adjustments to Appropriated Value		245			
FY 1998 Pres Budget Request	0	245	0	0	

Change Summary Explanation: FY 97 (+245) Congressional increase to appropriation to support armament testing for the Black Hawk.

C. Other Program Funding Summary: Not applicable

Project D504

Page 10 of 12 Pages

Exhibit R-2 (PE 0203744A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATION	SHEET (R-2 Exhi	ibit)	DATE February 1997	ry 1997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	fodifications/Pr am		PROJECT D504
D. Schedule Profile FY 1996	96	FY 1997	FY 1998	FY 1999	
Operational Testing on Black Hawk Armament		•×		-	
Project D504	Page	Page 11 of 12 Pages	Ĭ	Exhibit R-2 (PE 0203744A)	(AA)
		1255			Ifem 130

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RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	BREAKD	OWN (R-	3)	DATE F	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	PE NUMB 02037 Impro	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program	aft Modific ogram	ations/Pro			PROJECT D504
A. <u>Project Cost Breakdown</u> Operational Testing on Black Hawk Armament SBIR Total	FY 1996 E	FY 1997 239 6 245	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None Support and Management Organizations Test and Evaluation Organizations	Project Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TRADOC SBIR			239				239
Government Furnished Property: Not Applicable.							***
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			245 245				245 245
,							
Project D504	Page 12 of 12 Pages	^o ages		Exhil	Exhibit R-3 (PE 0203744A)	0203744A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	ıt		PE NI 020 Imp	PE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	nnle Nircraft Ei nt Prograi	ngine Co m	mponen		a O	PROJECT D106
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D106 Aircraft Engine Component Improvement Program (CIP)	3703	3834	2940	2933	2994	3049	3252	3334	3334 Continuing Continuing	Continuing

components to correct service revealed deficiencies, improve safety, enhance readiness, and reduce Operating and Support (O&S) costs. In addition, CIP includes redesign, A. Mission Description and Budget Item Justification: Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft test, and requalification of engine components identified as part of the Army's flight safety parts service life surveillance program. The tasks in this project support development of upgrades to current production vehicles and are appropriately funded in Budget Activity 7. Acquisition Strategy: Improved designs will be implemented via Engineering Change Proposal (ECP) and follow-on procurement or modification to a production contract to introduce the improved hardware.

FY 1996 Accomplishments:

- hydromechanical control contamination improvement program. Completed aircraft level Electromagnetic Interference (EMI) system level testing on T700 Engine - Completed update of life limits on the T700 engine components utilizing improved analytical and modeling techniques. Continued program to update the mission profiles used in life analysis by gathering field data. Completed spline lubrication program. Completed
- APU to preclude ring gear disconnect problem. Performed testability analysis on Blackhawk APU to improve fault isolation. Performed engine tests GTCP36 Auxiliary Power Unit (APU): Completed analysis of worn Blackhawk sun gear. Completed depot level component repair analysis for the Apache. Completed design and hardware development of relocated Apache fuel shutoff solenoid. Evaluated possible improvements in Blackhawk on Apache planetary bearings. 300
- Liquid or Light-Ends Air (LOLA) Pump: Started preliminary fuel pump design to design a liquid or light-ends (LOLA) engine fuel pump for UH-60 Blackhawk and Apache to prevent flameouts. 837
 - CH47 Procured one CH-47 T55-GA-714A Engine Conversion Kit to upgrade a T55-L-712 engine to a T55-GA-714A to qualify the conversion. 700
- Procured four mission data recorders for Blackhawk UH-60A to permit sampling of mission profiles that will enable T700-GE-700 flight safety parts
 - in-house support.
 - Total

Project D106

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Page 1 of 5 Pages

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Exhibit R-2 (PE 0203752A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operation	вирсет Астіvітץ 7 - Operational System Development	PE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	
FY 1997 Plam	1997 Planned Program: 1400 T700 Engine: Engine Life Management stress analysis on T700-700 GGT wide bore design and T700-401C/701C GGT low stress rotor heat transfer and stress analysis. Field performance monitoring. Mission profiles of the T700 engine have not been updated since originally defined in model specification. This program will procure and install "EPAMS" data recorders on sample Blackhawk and Apache aircraft. Field data will then be used	1700-700 GGT wide bore design and T700-401C/701 profiles of the T700 engine have not been updated sides and a factor of the T700 can be and Apache with the transfer of the tr	C GGT low stress rotor heat transfer nee originally defined in model aircraft. Field data will then be used
	to generate revised Lite Management stress analysis parameters. The recorder will first be installed on Blackhawk aircraft. Electrical Cable EMI shielding improvements will be designed for several engine wiring harnesses. Design and test an Improved "A" Sump Pressure System to preclude oil leaks. Design and qualification testing of a WGC HMU T2 Sensor Coating that will prevent related engine stalls. Redesign HI-TEMP CONNECTOR for the Speed and Torque sensor for maintainability problems. Identify errors in engine control software documentation for future control updates. 1000 T55 Engine: Develop bearing improvement program to reduce cost and improve reliability and fatigue life. Continue machined combustor liner	wiring harnesses. Design and test an Improved "A" Sensor Coating that will prevent related engine stalls. Ins. Identify errors in engine control software documentee cost and improve reliability and fatigue life. Con	k aircraft. Electrical Cable EMI ump Pressure System to preclude oil Redesign HI-TEMP CONNECTOR tation for future control updates.
•	failure from blades shifting forward. Design improved compressor impeller to improve efficiency and reduce cost. GTCP36 APU: Develop multiple element thermocouple for Blackhawk to improve accuracy of EGT measurement. Design and test new Apache fuel line connections to eliminate leaking. Test and qualify the Longbow torque limiting control valve for use on the Apache. Review Apache overhaul/field parts usage to determine high cost drivers. Design a retention device for the Blackhawk aft output shaft bearing to preclude spinning	Docs costs. Continue pinned institutions blade programssor impeller to improve efficiency and reduce cost Blackhawk to improve accuracy of EGT measureme Longbow torque limiting control valve for use on the esign a retention device for the Blackhawk aft output	am to prevent catastrophic engine t. t. nt. Design and test new Apache fuel Apache. Review Apache shaft bearing to preclude spinning
• • Total 3	and wear. 942 LOLA Pump: Design assurance testing, qualification testing, engine testing and flight testing. 100 In-house cost 92 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 3834	qualification testing, engine testing and flight testing. I Business Technology Transfer (SBIR/STTR) Programs.	
FY 1998 Planned Program: • 1605 T700 E T700-4	ned Program: 1605 T700 Engine: Engine Component Life Management fracture mechanics and stress analysis on T700-700 GGT wide bore. Life analysis (LCF) on T700-401C/701C GGT low stress rotor. Continue mission update program on the Apache. Write final report for Improved "A" Sump Pressure System. Finalize design and qualification test Electrical Cable Shielding Improvements. Complete design and bench test improved Hi temperature	e mechanics and stress analysis on T700-700 GGT wipdate program on the Apache. Write final report for ble Shielding Improvements, Complete design and be	de bore. Life analysis (LCF) on mproved "A" Sump Pressure och test improved Hi temnerature
•	connectors. Complete software documentation review and prepare final report. 1000 T55 Engine: Continue bearing improvement program to reduce cost and improve reliability and fatigue life. Conclude machined combustion liner program to improve durability and survivability and reduce O&S costs. Conclude pinned first turbine blade program to prevent catastrophic engine failure from blades shifting forward. Continue development of improved compressor impeller to improve efficiency and reduce cost	repare final report. Ince cost and improve reliability and fatigue life. Con O&S costs. Conclude pinned first turbine blade programmoved compressor impeller to improve efficier	clude machined combustion liner am to prevent catastrophic engine
• Total	GTCP36 APU Perform 200 hour engine test to qualify CIP designed hardware. Complete testing of Longbow torque limiting control valve. Evaluate possible use of common part designs for Allied Signal APUs.	designed hardware. Complete testing of Longbow to	rque limiting control valve.
t D106		Page 2 of 5 Pages Exh	Exhibit R-2 (PE 0203752A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhib	it)	DATE February 1997	7
BUDGET ACTIVITY 7 - Operationa	вирсет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0203752A Aircr Improvement Pr	PE NUMBER AND TITLE 0203752A Aircraft Eng Improvement Program	DE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program		PROJECT D106
FY 1999 Planned Program:	 Program: T700 Engine: Continue gathering data different missions and update life limits based on better define mission profiles. Design an auto-ignition system for the AH-64 Apache engines that automatically re-lights an engine after flameout to increase safety and reliability. T55 Engine: Conclude bearing improvement program to reduce cost and improve reliability and fatigue life. Conclude improved compressor impeller program to improve efficiency and reduce cost. Develop fireproof fuel and oil lines to bring them up to current safety standards. Redesign 	and update life limi an engine after flai educe cost and imp Develop fireproof f	ts based on bette meout to increas rove reliability a	or define mission pro e safety and reliabili and fatigue life. Con to bring them up to	ofiles. Design an auto-ignition by. Include improved compressor current safety standards. Rec	ı system
• 326 Total 2933		olete alloy. Begin E of a high time fiel ing life in a sandy/	lectromagnetic I ded engine to de dusty environme	interference/Pulse pr stermine possible fail ant.	otection program for ignition lure modes. Develop an eros	system
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value FY 98 Pres Bud Request	e Summary FY 1996 's Budget Request . 3999 e 4112 oropriated Value -409	FY 1997 2947 3834 3834	FY 1998 2936 2940	FY 1999 2928 2933		
Change Summary E	Change Summary Explanation: Funding: FY97 Congressional increase (+887) for LOLA C. Other Program Funding Summary: There are no other RDTE or other Appropriation	crease (+887) for LOLA TE or other Appropriation efforts.				
D. Schedule Profile	D. Schedule Profile FY 1996 1 2 3 4 1 T700 Engine: Design and test improved	FY 1997 2 3	4 × -	FY 1998 2 3 4	FY 1999 1 2 3	4
oil sump pressure system. 7700 Engine: Complete electric EMI shielding design and qualify improvements.	oil sump pressure system. T700 Engine: Complete electrical cable EMI shielding design and qualify improvements.		× .			
T700 Engine: Complete improved "sump design and qualification testing. LOLA Engine Fuel Pump Complete design and qualification test T55 Engine: Develop improved beari	T700 Engine: Complete improved "A" sump design and qualification testing. LOLA Engine Fuel Pump Complete design and qualification testing. T55 Engine: Develop improved bearings			×	*	
Project D106		Page 3 of 5 Pages		Exhil	Exhibit R-2 (PE 0203752A)	
		1359			116	Item 140



RDT&E BUDGET ITEM JUS	TIFICATION	TIFICATION SHEET (R-2 Exhibit)	R-2 Exh	ibit)		<u>o</u>	DATE F.	February 1	1997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203752A Aircraft Englimprovement Program	ठ गग∟ह Aircraft Engine Component ent Program	Engine	Сотр	onent			PROJECT D106
D. Schedule Profile FY 1996	1 1	FY 1997	-	Γ,	FY 1998	,	-	FY 1999	
to reduce O&S cost and improve bearing	+		+	4	O	1	-		4
T55 Engine: Develop machined						×			
combustor liner to improve durability and reduce O&S cost.									
T55 Engine: Develop pinned retention					×				
teature for first stage turbine blades to improve flight safety.									
GTCP36 APC: Develop multiple		×							
element a biacknawk mermocoupie, design and test Apache fuel connectors,									
test Longbow clutch control valve, review									
Apache cost drivers, design Blackhawk									
pinned bearing. GTCP36 APII: Perform 200 hour			×						
engine test, complete Longbow control			ξ						
valve, and evaluate APU common parts.									
GTCP36 APU: Perform inspection of							×		
high time engine and develop erosion resistant turbine wheel for Blackhawk.									
Project D106	Pc	Page 4 of 5 Pages				Exhibit R	-2 (PE	Exhibit R-2 (PE 0203752A)	
		1260							Itom 140

RDT&E PROGRAM ELEMENT/	GRAM EL	EMENT/PR	OJECT	COST B	REAKD	PROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	Developmen	ų		PE NUMBER 020375 Improv	PE NUMBER AND TITLE 0203752A Aircraft Eng Improvement Program	aft Engine ogram	DE NUMBER AND TITLE 0203752A Aircraft Engine Component Improvement Program	ınt		PROJECT D106
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation SBIR/STTR			FY 1996 3528 175 0		EY 1997 2892 850 0 92 3834	FY 1998 2940 0 0	FY 1999 2933 0 0 2933	64 E O O E		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activ	and Planning Inf pe Award or Obligation Date	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Product Development Organizations General Electric SS/CPFF I Allied Signal SS/CPFF I Air Force MIPR J Chandler Evans SS/CPFF J SBIR/STTR	ttions Dec 94 Dec 94 Jun 96 Jun 96			38418 17872 12600	1476 700 300 837	1594 998 300	1445 1147 348	1452 1140 341	Cont Cont Cont	Cont Cont Cont 837 92
Support and Management Organizations ATCOM ATCOM T53 Engine Test and Evaluation Organizations: Not Applicable Government Furnished Property: Not Applicable	anizations Dec 94 ions: Not Applicatives	N/A ible	N/A	10342	390	850			Cont 0	Cont 352
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	i,			68890	3313	2984 850	2940	2933		Cont
Total Project Project D106			Pa	/9584 Page 5 of 5 Pages	3703 ges	3834	2940 Exh	2933 nibit R-3 (PE	10 2933 Exhibit R-3 (PE 0203752A)	Cont
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE FeI	February 1997	161
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203758A Digit	PE NUMBER AND TITLE 0203758A Digitization	5				
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	110583	137078	156960	149015	151349	152491	153442	152006	Continuing	Continuing
D374 Horizontal Battlefield Digitization	110583	88125	57333	49487	51928	53154	54198	52644	Continuing	Continuing
D376 Force XXI Initiatives	0	48953	99627	99528	99421	99337	99244	99362	Continuing	Continuing

significant increase in capabilities by rapidly evaluating enabling technologies for their potential acquisition. Digitization will provide a common picture of the battlefield to Mission Description and Budget Item Justification: This program element encompasses efforts to leverage advanced technologies to provide battlefield commanders a without an embedded digital capability with the Army Tactical Command and Control Systems and brigade and below command and control systems from tactical to the strategic/sustaining base level. The Army will evaluate approximately 96 systems to jump-start technology. The underlying mission is to put proven technology in the commanders, warfighters and supporters, tailored to their specific requirements, for planning and execution. It provides for the interoperability of platforms with and hands of the soldier sooner for the warfight while gaining significant time and dollar savings. This Program Element supports experimentation and modification of equipment in the Army inventory and therefore is correctly placed in Budget Activity 7.

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Exhibit R-2 (PE 0203758A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	JEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0203758A Digit	PE NUMBER AND TITLE 0203758A Digitization	ñ			a 0	PROJECT D374
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D374 Horizontal Battlefield Digitization	110583	88125	57333	49487	51928	53154	54198	52644	52644 Continuing Continuing	Continuing

Intelligence (FAADC2I), All Source Analysis System (ASAS), Combat Service Support Control System (CSSCS)] with common technology through new acquisitions, Prewhile sharing the same information with equal clarity, using advanced technologies and digital communications. To prove out concepts and requirements, near-term efforts decisive warfighting improvement to the force. Battlefield digitization allows the Army's primary weapons and battle command systems to see, acquire and engage threats will focus on developing a seamless battlefield architecture and digitized applique systems (computer with graphics display, global positioning system, communications link, and command and control software) required to support live experimentation with a brigade-sized maneuver task force in FY 1997 and a division-level experiment in seamless battlefield architecture improves the capabilities of battlefield systems that fight together as units or integrated task forces, providing a significant and potentially A. Mission Description and Budget Item Justification: This project provides for the interoperability of combat, combat support, and combat service support platforms (i.e., tanks, fighting vehicles, aircraft, command/control and logistics/resupply) and battlefield automated systems [i.e. Maneuver Control System (MCS)/Phoenix, Force Planned Product Improvements (P31), and system-component upgrades. The application of common technologies across multiple systems through an integrated and XXI Battle Command, Brigade and Below(FBCB2), Advanced Field Artillery Tactical Data System (AFATDS), Forward Area Air Defense Command, Control and

Acquisition Strategy: Provide an integrated digital capability to systems supporting multiple battlefield operating systems, with initial emphasis on meeting the near-term contracts will be awarded through full and open competition. The appliqué contract will be managed through the Program Executive Officer for Command, Control and Communication Systems. Other communications and software programs necessary for the series of experiments will be managed by the specific hardware and software software requirements will be determined through a series of iterative experiments. A variety of contract types will be used due to the diversity of efforts. All appliqué platform and combat environment requirements. Variants include commercial off-the-shelf, ruggedized and near-military specification systems. Final hardware and requirements for the designated Experimental Force (EXFOR). Provide three variant appliqués to systems that do not have an embedded digital capability based on program managers.

Project D374

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Exhibit R-2 (PE 0203758A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operations	вирсет Астіvітү 7 - Operational System Development	PE NUMBER AND TITLE 0203758A Digitization	PROJECT D374
FY 1996 Accomplishments:	Ishments: Developed appliqués and conducted platform integration. Continued development of command and control software for brigade and below. Continued simulation, experimentation and evaluation of prototype hardware and software. Continued development of a data distribution system. Initiated development of protocols and standards, and systems engineering. Continued development of an upgrade to the M1A2 intervehicular information system (M1A2 System Enhancement Program). Obtained avionics equipment for the Experimental Force (EXFOR). Supported Task Force XXI Advanced Warfighting Experiment requirements	n. f prototype hardware and software. stems engineering. rvehicular information system (MIA2 System Enhan riment requirements	icement Program).
FY 1997 Planned Program: 16578 Continu 31470 Continu 25944 Conduc 4662 Comple 7339 Interope 2132 Small B	te development of appliqués and the development of command and ct simulation, experimentation and the development of data distribution arability: Continue development of usiness Innovation Research/Smal	neir platform integration. ontrol software for brigade and below. evaluation of prototype hardware and software. n system. i protocols and standards, M1A2/appliqué digital connectivity, and la Business Technology transfer (SBIR/STTR) Programs	Battlefield Interoperability Program.
FY 1998 Planned Program:	te development, upgrades and mod te development and upgrades to Br te simulation, experimentation and Engineering/Development/Integraterability: M1A2/FBCB2 digital con	ifications to Force XXI Battle Command Brigade & Below (FBCB) igade and Below Command and Control Software. evaluation of prototype hardware and software. tion mectivity, and Battlefield Interoperability Program	(2) Hardware and Installation kits.
Project D374	A A STATE OF THE S	Page 3 of 10 Pages	Exhibit R-2 (PE 0203758A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	GET ITEN	I JUSTI	FICATIO	N SHEE	r (R-2 E	xhibit)		DATE	TE February 1997	7 1997
BUDGET ACTIVITY 7 - Operational System Development	opment			PE NUMBER AND TITLE 0203758A Digit	AND TITLE A Digitization	zation				PROJECT D374
FY 1999 Planned Program: 13816 FBCB2 Hardware and Installation kit upgrades/modifications 13724 Brigade and Below Command and Control Software development/upgrades 6706 Simulation, experimentation and evaluation of prototype hardware and software. 8640 System Engineering/Development/Integration 6601 Prototype Tactical Multi-Unit Gateways Total 49487	and Installation Command and nentation and e g/Development Multi-Unit Gat	kit upgrade I Control Soi valuation of Integration eways	s/modificatio ftware develc prototype ha	ns pment/upgrad ırdware and so	es ftware.			1		
B. Project Change Summary Previous President's Budget Request Appropriated Value Adjustments to Appropriated Value				FY 1996 99103 100867 +9716	FY 11	FY 1997 110180 88125	FY 1998 26963	FY 1999		
FY 1998 Pres Bud Request				110583	∞	88125	57333	49487		
Change Summary Explanation: Funding: FY 97 congressional reduction (-22055). FY 98 (+30370) & FY 99 (+49487) supp	unding: FY 97 FY 98	congression (+30370) &	al reduction (FY 99 (+494	(-22055). ¹ 87) support fie	lding of dig	yitized divis	ion and con	tinues dev	FY 97 congressional reduction (-22055). FY 98 (+30370) & FY 99 (+49487) support fielding of digitized division and continues development efforts.	
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OMA, PSP 11, PE 118207000 Other Procurement Army Activity 2, SSN W61900			2000		44267	53398	56143	57516	Continuing	Continuin g
D. Schedule Profile	TT C	FY 1996	_	FY 1997	~		FY 1998	4	Y 199	
Warrior Focus AWE Tactical Internet Integration Test Version 1.0 FBCB2 Software Delivery	**	^	,			-	<i>x</i> 1	4	7	4
Hardware Deliveries Complete Brigade Task Force XXI AWE NTC Rotation for Task Force XXI		* *	**	××						
Integrated Product Team (IPT)Review Version 2.0 FBCB2 Software Delivery				×	×					
Project D374			Pag	Page 4 of 10 Pages	S			Exhibit R-	Exhibit R-2 (PE 0203758A)	æ





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203758A Digitization	PROJECT D374
9661 Y	FY 199	FY 1999
Division XXI AWE Force Development Test & Evaluation Version 3.0 FBCB2 Software Delivery IOTE Integrated Product Team (IPT)Review Version 4.0 FBCB2 Software Delivery Production Award (1QFY00)		4 X X X X X X X X X X X X X X X X X X X
dilestone		
Project D374	Page 5 of 10 Pages	Exhibit R-2 (PE 0203758A)

KDI & FRUGRAIM ELEIMEN I PROJECT COST BREAKDOWN (R-3)	IT/PROJECT CO	OST BREAK	(DOWN (R-		DAIE February 1997
BUDGET ACTIVITY 7 - Operational System Development	d	PE NUMBER AND TITLE 0203758A Digitization	_{LE} Jitization		PROJECT D374
A. Project Cost Breakdown	FY 1996	FY 1997	FY 1998	FY 1999	
Software Development	36127	31180	13092	12060	
Development, Experimentation, & Evaluation	45125	26720	18956	13486	
Program Management and Engineering Support	8251	9383	10000	10000	
SBIR		2132			
Total	110583	88125	57333	49487	
B. Budget Acquisition History and Planning Information:	n: Not Applicable				

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Project D374



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Exhibit R-3 (PE 0203758A)



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)		DATE Fel	February 1997	76
BUDGET ACTIVITY 7 - Operational System Development	ų.		PE N 020	PE NUMBER AND TITLE 0203758A Digitization	TITLE Digitizatio	u			a U	PROJECT D376
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D376 Force XXI Initiatives	0	48953	99627	99528	99421	99337	99244	99362	99362 Continuing Continuing	Continuing

acquisition process. Force XXI Initiatives is one of the Army's Acquisition Reform Initiatives. The Army intends to use Force XXI initiatives to evaluate candidate systems Vehicle-Enhanced and the prototype Guided Parafoil Air Delivery Systems). Initiatives can originate from virtually anywhere but will share the characteristic of achieving a materiel fielding items, prototype items, and concept/emerging technology items) to jump-start technology early. The underlying mission is to put proven technology in the hands of the soldier sooner while gaining significant time and dollar savings. The Warfighting Rapid Acquisition Program(WRAP) tests emerging technology identified Milestone III Decision immediately or be able to achieve this Milestone after no more than two years of development. Technology advances so rapidly that the current from Army's Advanced Warfighting Experiments(AWE) as a candidate system (as has been done successfully in identifying the prototype Bradley Stinger Fighting A. Mission Description and Budget Item Justification: The Congress has stated its understanding of the benefits to be derived by the Army from a streamlined acquisition process time frames can lead to procurement of obsolescing system capability.

WRAP ASARC decisions on candidate systems will be documented in an Acquisition Decision Memorandum signed by the Acquisition Executive of the Army and the Vice candidate system will be reviewed and prioritized by the WRAP Army Systems Acquisition Review Council (ASARC). Each candidate will have a documented Battle Lab Chief of Staff of the Army. The Army expects to lead in the development, prototyping and fielding of successful candidates harmonized with other Services' Requirements. Acquisition strategy: Provide the Army the capability to rapidly provide the soldier in the field the state-of-the-art items needed for the warfight. The merits of each Experimentation Plan, an Operational Requirements Statement, an Urgency of Need Statement, experimentation results, an Acquisition Strategy, and budget estimate.

FY 1996 Planned Program: Project not funded in FY96

FY 1997 Planned Program:

- Execute Force XXI Initiatives in accordance with mission and acquisition strategy outlined above for candidate systems. 47757
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 1196

Total 48953

FY 1998 Planned Program:

Execute Force XXI Initiatives in accordance with mission and acquisition strategy outlined above for candidate systems. 99627 99627 Total

FY 1999 Planned Program:

99528 Continue to evaluate candidate systems in accordance with mission and acquisition strategy outlined above.

Total 99528

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ET ITEN	JUSTIF	CATIO	Z SHEET	(R-2 Ex	nibit)		DATE	February 1997	1997
BUDGET ACTIVITY 7 - Operational System Development	pment			PE NUMBER AND TITLE 0203758A Digit	ND TITLE N Digitization	tion				PROJECT D376
B. Project Change Summary Previous President's Budget Appropriated Value				FY 1996 0	FY 1997 0 48953		F <u>Y 1998</u> 0	FY 1999 0		
Adjustments to Appropriated value Current Budget Submit/President's Budget				0	48953		99627	99528		
Change Summary Explanation: Funding: FY 97 Congressional appropriation initiative. Funding provided in accordance with Secretary of the Army and Chief of Staff, Army testimony to execute this Acquisition Reform Initiative to fund emerging technologies for Force XXI.	FY 97 Congr n Reform Initi	essional apprative to fund	opriation initi emerging tec	ative. Fundin hnologies for l	g provided in Porce XXI.	accordanc	e with Sec	retary of the A	rmy and Chie	of Staff,
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000 E	FY 2001	FY 2002	FY 2003	To	Total Cost
TBD										
D. Schedule Profile TBD	-	FY 1996 2 3	4	FY 1997 2 3	4	1 2	FY 1998 2 3	4	FY 1999 2 3	4
Project D376			Page	Page 8 of 10 Pages				Exhibit R-2 (PE 0203758A)	E 0203758A	2
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DT&E PROGRAM ELEMENT/	PROJECT (SOST B	REAKD	COST BREAKDOWN (R-3)	(3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0203758A Digit	PE NUMBER AND TITLE 0203758A Digitization	zation				PROJECT D376
A. Project Cost Breakdown: TBD Total	FY 1996	FY	FY 1997	FY 1998	FY 1999	67		
B. Budget Acquisition History and Planning Information:								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations TBD Support and Management Organizations TGA DEVICED OF TREE TREE TEACTOR OF TREE TREE TEACTOR OF TREE TREE TREE TREE TOTAL OF TREE TREE TREE TREE TREE TREE TREE TRE	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
TBD Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property TBD Support and Management Property TBD		Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Project D376	Page	Page 9 of 10 Pages	25		Exbi	Exhibit R-3 (PE 0203758A)	0203758A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BRE	AKDO	WN (R-3		DATE	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203758A Digitization	D TITLE Digitizat	tion				PROJECT D376
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY	FY 1996	FY 1997 TBD TBD TBD 48953	FY 1998 TBD TBD TBD 99627	FY 1999 TBD TBD 99528	Budget to Complete	Program
Project D376	Page 10 of 10 Pages			E X	Exhibit R-3 (PE 0203758A)	0203758A)	
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RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	
вироет Астіvітү 7 - Operational System Development	ıt		PE NI 020	PE NUMBER AND TITLE 0203801A Miss Improvement Pr	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	r Defens m	e Produc	+:		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	59199	64557	17412	11431	33759	32752	44351	47400	Continuing	Continuing
D036 PATRIOT Product Improvement Program	43137	46280	12388	9474	2225	4768	0	0	0	401886
D038 Avenger Product Improvement Program	1	0	0	0	0	0	3981	3982	0	37547
D303 Stinger Product Improvement Program	16061	18277	5024	1957	27982	27984	39406	39456	Continuing	Continuing
D633 THAAD P3I	0	0	0	0	0	0	964	3962	Continuing	Continuing

Mission Description and Budget Item Justification: The changing global threat and the new Army Warfighting Doctrine developed to respond to this changing threat all significantly impact the mission of Air Defense Artillery (ADA). This doctrine calls for U.S. forces to be able to win two nearly simultaneous major regional conflicts and continually be upgraded and modernized in accordance with the ADA missions. The FY 98 budget funds critical improvements to PATRIOT and Stinger. These projects to conduct combat operations characterized by rapid response and a high probability of success while minimizing the risk of significant American casualties. ADA must support development of upgrades to current equipment and are appropriately funded in Budget Activity 7.

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Exhibit R-2 (PE 0203801A)

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SH	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	26
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020 Imp	PE NUMBER AND TITLE 0203801A Missi Improvement Pr	DE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	r Defens m	e Produc	+	a. u	РРОЈЕСТ D036
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D036 PATRIOT Product Improvement Program	43137	46280	12388	9474	5777	4768	0	0	0	401886

materiel changes (MC) culminating in the attainment of the PATRIOT Advanced Capability - 3 (PAC-3) system. The communication upgrades improve PATRIOT's above and below battalion communication equipment. These changes eliminate PATRIOT peculiar communications equipment and improve PATRIOT's interoperability between A. Mission Description and Justification D036 - PATRIOT Product Improvement Program: The PATRIOT system is being upgraded through a series of individual systems and between the services.

configurations which are scheduled to be fielded in the same time-frame. Configuration groupings are a convenience for managing block changes of hardware and software and are not a performance-related grouping. However, incremental increases in performance will be determined for each configuration in order to provide benchmarks for Acquisition Strategy: The design objective of the PATRIOT system was to provide a baseline system capable of being modified to cope with the evolving threat. This alternative minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The PATRIOT Program consists of two interrelated acquisition programs - The PATRIOT Growth Program and the PAC-3 Missile Program. Growth program modifications are grouped into configuration testing and for the development of user doctrine and tactics.

FY 1996 Accomplishments:

- P3I test program 5226
- Communications upgrades 3978
- Responsive threat analysis
- Anti-Cruise Missile upgrade 33183

FY 1997 Planned Program:

- P3I test program
- Communications upgrades 2667
 - Responsive threat analysis 750
- Anti-Cruise Missile upgrade 33437
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 1100

Project D036

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Exhibit R-2 (PE 0203801A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION SH	IEET (R-2	Exhibit	((DATE Fe	February 1997	76
вирдет астімту 7 - Operational System Development	PE NU 020: Imp	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	sile/Air E Program	יב אנוששבת אחם דודנב 1203801A Missile/Air Defense Product Improvement Program		<u>.</u>	PROJECT D036
 FY 1998 Planned Program: 5675 P3I test program 2960 Communication upgrade 750 Responsive threat 3003 Horizontal Battlefield Digitization Total 12388 						3	
FY 1999 Planned Program:						·	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 FY 12 46477 12 46 4686 4686 46137 46	FY 1997 12291 46280 46280	FY 1998 9406 12388	FY 1999 6481 9474			
ing: FY 1996: FY 1998: FY 1999:	Undistributed Congressional reductions/rescissions (-2488); repr Funding increase for Horizontal Battlefield Digitization (+2982) Funding increase for Horizontal Battlefield Digitization (+2993)	ons/rescissions tlefield Digitize tlefield Digitize	(-2488); rep ation (+2982) ation (+2993)	rogramming to hig , ,	ther priority re	equirements (-	2198).
C. Other Program Funding Summary Missile Procurement, Army Budget Activity 2 - PATRIOT Mod (C50700) Budget Activity 3 - PATRIOT Mod (C50700) 6767 23442	Y 1997 FY 1998 0 349109 23442 20825	FY 1999 F 369885 4	FY 2000 FY 459233 4 19589	FY 2001 FY 2002 445367 433145 24310 19894	EY 2003 396760 1 16544	To Complete 39645	Total <u>Cost</u> 12087483 565916
D. Schedule Profile 1996 1 2 3 Development Test & Evaluation X	FY 1 2	FY 1997 2 3 4	-	FY 1998 2 3 4	1	FY 1999 2 3	4
Project D036	Page 3 of 11 Pages	l Pages		Exhi	Exhibit R-2 (PE 0203801A))203801A)	
	t						Item 142

RD	RDT&E PROGRAM ELEMENT/P	GRAM EL	EMENT/P	ROJECT	COSTB	REAKD	ROJECT COST BREAKDOWN (R-3)	-3)	DATE	Fohriism, 1007	200
вирсет астіміту 7 - Operational System Development	al System D	evelopmer			PE NUMBE 020380 Improv	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	le/Air Defe	PENUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program			PROJECT
A. Project Cost Breakdown Contract Engineering Support	reakdown ng Support			FY 1996 37376	ы	FY 1997 37926	FY 1998 6963	FY 1999 4006	5		
Program Management Support Developmental Test and Evaluation SBIR/STTR	ent Support it and Evaluation			1301		1436 5818 1100	1691 3734	1291	7		
Total B. Budget Acquisition History and Planning Information	ition History an	d Planning Inf	ormation	43137		46280	12388	9474	4		
Performing Organizations	nizations										
Government	Method/Type		Performing	Project	Total						
Activity	or runding Vehicle	Ubligation Date	Activity	Office	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Raytheon	ient Organizatii	ons									
DAAH0182CA181			-		3722						3722
DAAH0189C0458					22455 23228						22455
DAAH0192C0036					2000						5000
Small Contracts					1168						1168
General Electric DAAH0187CA006					1671						
Brunswick Corp.					130						4824
Martin Marietta					3100						3100
DAAH0192C0301	SS/CPFF	15Jul92	5463	5463	3763	100					3863
DAAH0191C0602	SS/CPIF	22Apr92	20702	20702	23077						72077
DAAH0192C0006	SS/CPAF	27Jan92			56460						25077
DAAH0195C0043 PAC 2 Anti-Cruise	SS/CPAF	01Feb95			6005	4093	513	1000	1000	1690	14301
Project D036				Page	Page 4 of 11 Pages			Exhi	Exhibit R-3 (PF 02038014)	02038014)	02950
									- 10	71.000070	



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RDT&E PROGRAM ELEMENT/PROJECT	CT COST BREAKDOWN (R-3)	REAKD	OWN (R-	3)	DATE	February 1997	766
вирсет астилту 7 - Operational System Development	PE NUMBER 020380	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	e/Air Defe gram	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program			PROJECT D036
ractor or Contract rnment Method/Type Award or Performing Properties Obligation Activity Contract Ity Vehicle Date EAC EBU EBU EBU EBU EBU EBU EBU EBU	roject Total Office Prior to EAC FY 1996	FY 1996	FY 1997 200 4576 1100	FY 1998 2960 3003	FY 1999	Budget to Complete	Total Program 200 7536 6009
DAAH0187CA008 DAAH0190C0487 DAAH0194C0105 C/CPAF Total Total Control of the c	2270 6266 5344 10817	791	1436	791	791	422	2270 6266 8139 15326
Missile Command 1095 White Sands Missile Range 1095/MIPR Other Govt Agen MIPR Other Govt Agent	2322 2841 2023 95377	1098 1370 1992	1882 2596 1340	1000 1534 1200	700 1737 1740	1312 2843 3115	8314 12921 11410 95377
Government Furnished Property: None. Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	152802 24697 102563 280062	37376 1301 4460 43137	39026 1436 5818 46280	6963 1691 3734 12388	4006 1291 4177 9474	1690 1585 7270 10545	241863 32001 128022 401886
Project D036	Page 5 of 11 Pages	šes		Exh	Exhibit R-3 (PE 0203801A)	0203801A)	Item 142

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	STIFICA	TION SI	HEET (R	1-2 Exhi	bit)		DATE Fet	February 1997	16
BUDGET ACTIVITY 7 - Operational System Development	J		PE N 020 Im	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	ritle fissile/Ai nt Progra	r Defens m	e Produc			РКОЈЕСТ D303
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to	Total Cost
D303 Stinger Product Improvement Program	16061	18277	5024	1957	27982	27984	39406	39456	39456 Continuing Continuing	Continuing

design qualification of guidance section conducted as part of the production qualification, and platform integration. A portion of funds in FY 1996 and FY 1997 will be used Army) doctrine. The air-to-air requirement satisfies three tasks: self protection, protect force, and augmentation of air defense forces. Funding in FY 1996 and FY 1997 in RMP to improve countermeasures capability via externally loaded software, which is downloaded from a reprogrammable module in the gripstock. This concept allows for The program develops the improved missile for adaptation to any or all of the STINGER firing platforms, extends the missile service life and establishes a government post to develop MIL-STD 1760 launcher electronics to be fielded with the Apache Longbow Helicopter air-to-air requirements, based on Joint Service (U.S. Air Force and U.S. deployment software support posture. The Block II Engineering, Manufacturing, Development (EMD) program provides for development to a performance specification, Feasibility Study will form the basis for the development of a VSHORADS/SHORADS NATO Staff Requirement and information to support the development of a followdevelopment of an advanced infrared (IR) Focal Plane Array Seeker which improves the performance of the missile against an expanded target and in background clutter. A. Mission Description and Budget Item Justification: D303-Stinger Product Improvement Program: This project provides a product evolution of the STINGERsolves the recognized system performance deficiencies in countermeasures and other engagement conditions, and increases terminal accuracy. The Block II program is a timely upgrades to correct system deficiencies, rapid reaction to new threats or threat countermeasures, development of specialty software programs where full capability may not be desired, and accommodation of new missions. The Block I upgrade project, which adds a roll sensor and enhanced software, extends the missile service life, competitive Feasibility Study on NATO Very Short Range Air Defense Systems (VSHORADS) and Short Range Air Defense Systems (SHORADS). The output of the this project also supports an eight nation Memorandum of Understanding (MOU) signed by the Office of Secretary of Defense in 1994 for the conduct of a two-year on system to STINGER.

Acquisition Strategy: The Block I development program is a Sole Source (SS)/Cost Plus Incentive Fee (CPIF) contract awarded in 1992. The Block II development began FY 1993 as Technology Base Broad Agency announcement with a SS/Cost Plus Fixed Fee (CPFF) contract. Current SS/CPFF contract awarded 1996 for pre-EMD, EMD VSHORADS/SHORADS Competitive/Firm Fixed Price (FFP) contract was awarded to two international consortia. The United Kingdom was designated as the Pilot start FY 2000, MS IIIa FY 2005, and FUE FY 2007. A SS/CPIF contract for MIL-STD Launcher electronics development is planned for mid-FY 1997. The Nation, serving as Contracting Authority.

FY 1996 Accomplishments:

- 2007 Conducted testing of Block I Phase II Software
- Completed Block I Phase II Software Design; performed Block I Software Critical Design Review and release Engineering Change Proposal 6101
 - 493 Initiated Block I performance assessment
- 4238 Fabricated/tested second Block II Seeker Head

oject D303

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Exhibit R-2 (PE 0203801A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operationa	BUDGET ACTIVITY 7 - Operational System Development	0203801A Missile/Air Defense Product	PROJECT D303
		improvement riggiani.	
FY 1996 Accompl	FY 1996 Accomplishments: (continued)		
3088	Initiated Block II electronics state-of-the-art packaging (miniaturization) of electronics section	iniaturization) of electronics section	
• 1434	Upgraded Block II Seeker to correct limitations discovered in initial development	in initial development	
• 1040	Initiated development of contractor Block II Simulation and defined Platform versus Block II interfaces	d defined Platform versus Block II interfaces	
1127	Initiated development of Stinger Universal Electronics for	Electronics for MIL-STD 1760 launcher which supports digital electronic-based systems.	nic-based systems.
575	Conducted Bradley linebacker concept studies		
200	VSHOKADS/SHOKADS international proposal evaluation/negotiations/contract awards VSHORADS/SHORADS and subsystem development	/negotiations/contract awards	
Total 16061	and a second control of the control		
FV 1997 Planned Program:	rogram:		
• 702	Complete Block I performance assessment		
2435	>	ehicle (UAV) specific software	
• 531	UAV software performance analysis		
3898	Produce prototype Block II electronics state of the art packaging (miniaturization) of electronics section	aging (miniaturization) of electronics section	
• 4811	Integration of Block II tactical-sized guidance assembly		
2191	Perform valuation of Block II guidance assembly		
2202	VSHORADS/SHORADS system variants development and evaluation of system variants	evaluation of system variants	
1901	Continue development of MIL-STD 1760 Launcher electronics	nics	
	Small Business Innovation Research/Small Business Techno	Business Technology Transfer (SBIR/STTR) Programs	
Total 18277			
FY 1998 Planned Program:	rogram:		
• 1450	Block II packaging and fabricate on	le tactical size guidance section	
• 1464	Design and package Block II control section		
• 460	Initiate development of contractor hardware-in-the-loop flight simulations	ght simulations	
• 1650	Complete VSHORADS/SHORADS Feasibility Study and Forward NATO Staff Requirement	orward NATO Staff Requirement	
Total 5024			

Project D303	Pag	Page 7 of 11 Pages	Exhibit R-2 (PE 0203801A)
			Itam 147

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SE	HEET (R	-2 Exhil	bit)		DATE Fe	February 1997	197
вироет Астіуітү 7 - Operational System Development	+		PE NC 020 Imp	PE NUMBER AND TITLE 0203801A Miss Improvement Pr	e number and title 0203801A Missile/Air Improvement Program	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	Produc		ı I	PROJECT D303
FY 1999 Planned Program: T35 Design/fabricate/evaluate three Block II launch tube and end cap units 840 Continue Contractor Hardware-in-the Loop Flight Simulations 382 Block II airframe dynamic analysis/performance prediction Total 1957	ee Block II la re-in-the Loop nalysis/perfor	unch tube an p Flight Simi nance predic	nd end cap un ulations xtion	nits						
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		EY 1996 13662 14046 2015	E	FY 1997 18668 18277	FY 1998 2314	<u>FY 1999</u> 2849	6 6			
FY 1998 President's Budget Request		16061		18277	5024	1957	7			
ng Summary	FY 1996	FY 1997	FY 1997 FY 1998 FY 1999 I	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compi	Total Cost
Missile Procurement, Army Budget Activity 2 - Stinger (C18500) Budget Activity 3 - Stinger Mods (C20000) Budget Activity 3 - BSFV-E Mods (C21500)	9804	29742	8710 3701	14403	24086	34519	40108	31872	Cont'd Cont'd	1143340 Cont'd Cont'd
D. Schedule Profile 1 Block I CDR Software ECP	FY 1996 2 3	4 X	F) 1	FY 1997 2 3	4	FY 1998 2 3	4	_	FY 1999 2 3	4
Block I Pertormance Assessment Complete Block I Flight Tests Initiate Future Software Development		×	× ×							
Project D303			Page 8 of 11 Pages	1 Pages			Exhibi	Exhibit R-2 (PE 0203801A)	203801A)	
										Ttem 140





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	
	FY 199	FY 1999
Initiate Block II Guidance Section Integration Design Complete Block II Tactical Size Electronics Complete Block II Guidance Section Integration Complete Integration of Guidance Hardware with Contractor Simulation	2 X X X Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	4 × 2 1 2 3
Project D303	Page 9 of 11 Pages	Exhibit R-2 (PE 0203801A)
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RD	RDT&E PROGRAM ELEMENT/P	SRAM EL	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	COST B	REAKDO	JWN (R-	3)	DATE	February 1997	197
вирсет астіvіту 7 - Operational System Development	al System De	evelopmen	4		PE NUMBER 020380' Improve	PE NUMBER AND TITLE 0203801A Missile/Air I Improvement Program	PE NUMBER AND TITLE 0203801A Missile/Air Defense Product Improvement Program	inse Prodi		1	РRОЈЕСТ D303
A. Project Cost Breakdown Project Management In-House	reakdown it In-House			FY 1996 821	FY	FY 1997	FY 1998 414	FY 1999	Q. La		
RDEC Engineering Support	Support			2334		3843	200	159			
Major Development Contractor	t Contractor			11097		10448	2760	1723			
Contracted Services				727		26					
Other Government Agencies	Agencies			42		42	1001				
UK Management Office	ffice			106		176	124				
UK MOU U.S. Program Support	gram Support			291		294	319				
SBIR/STTR Total				16061		446 18277	5024	1957			
B. Budget Acquisition History and Planning Information	tion History and	l Planning Infe	<u>ormation</u>								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Product Development Organizations	ent Organizatio	us									
DAAH0192C0213	SS-CPIF	Apr 92		20606	18224	2382					20606
Future S/W Upgrd	TBD	TBD					2105				2105
DAAH0193CR127	SS-CPIF	Apr 93	4629	4629	4629						4629
DAAH0196C0180	SS-CPFF	Mar 96				6750	7196				13946
BLOCK II 98-99	SS-CPIF	TBD						2760	1723		4483
Block II EMD	SS-CPIF	TBD								125805	125805
CITE Dev	SS-CPFF	Sep 96				1965	041				1965
Tarnete Mat Ofc	MIPR	Apr 94			2100		041				841
Targets Mgt Ofc	MIPR	Various			7100					12013	12013
BSFV Aggregate	Various	Various			7025						7025
Project D303				Page	Page 10 of 11 Pages	ses		Exhi	Exhibit R-3 (PE 0203801A)	0203801A)	
					1381						Item 142
	•				1001						

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RD	RDT&E PROG	PROGRAM ELEMENT/	EMENT/PF	PROJECT	COSTB	REAKD	BREAKDOWN (R-3)	3)	DATE	February 1997	797
BUDGET ACTIVITY 7 - Operational System Development	l System De	velopmen	-		PE NUMBER ANI 0203801A Improveme	PE NUMBER AND TITLE 0203801A Missile/Air Improvement Program	D TITLE Missile/Air Defense Product ent Program	inse Prod			PROJECT D303
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	<u>Date</u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Block I Aggregate	Various	Various			8152	50	52				8254
PMO/RDEC	Allot/1095	Various				3155	4902	614	234	54936	63841
Svcs (Aggregate)	various	various			181					8836	2106
SUE Aggregate	Various	Various				102	45				177
Other Govt Agen	MIPR	Various				42	42			3238	3322
SBIR/STTR							446				446
British Aerospace	C-FFP	Jul 96				322	866	604			1792
Thomson-CSF	C-FFP	Aug 96				321	998	603			1790
UK Ministry of	MOU/1095	Dec 95				106	176	124			406
Defense (Mgt Ofc)											
SBIR/STTR							446				446
Support and Management Organizations	gement Organiza	ations									
DLA90093D0011	SS-FFP	Aug 96				575					575
U.S. Prog Spt	1095	Dec 95				291	294	319			904
MOU VSHORAD/											
SHOKADS Test and Evaluation Organizations: None	1 Organizations:	: None									
Government Furnished Property: Not applicable	shed Property: 1	Not applicable									
Subtotal Product Development	relopment				40311	15195	17983	4705	1957	908700	064070
Subtotal Support and Management	Management					998	294	319	1671	070107	1479
Subtotal Test and Evaluation	aluation				40211	10001		100			
rotar reject					40311	10001	1/791	2024	195/	204828	286458
Project D303				Page	Page 11 of 11 Pages	Ser		П Уh	hit D 2 /DE	Evhihit P 3 (PE 0303804 A)	*******

	RDT&E BUDGET ITEM JUST	EM JUS		IFICATION SHEET (R-2 Exhibit)	HEET (R	2-2 Exhi	bit)		DATE Fe	February 1997	797
80DG 7-(BUDGET ACTIVITY 7 - Operational System Development	ı		PE NI 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	TITLE Other Mis	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	uct Impr	ovement		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	64920	9874	1255	17011	30533	51752	82152	72270	0	1166289
D045	D045 HELLFIRE Product Improvement Program	0	3818	0	0	0	0	22970	18528	0	505055
DZMT	D2MT ATACMS BLK IA Oper Tests	3397	378	0	0	0	0	0	0	0	3775
D304	D304 Army TACMS BLK IA	22045	4376	0	0	0	0	0	0	0	88110
D336	TOW Product Improvement Program	29995	1302	1255	1242	0	0	0	0	0	348888
D689	ATACMS BLK 1B	0	0	0	0	10368	34718	49688	53742	0	148516
D701	Hydra 70 Program Improvement Program	9483	0	0	0	0	0	0	0	0	9483
D785	Longbow HELLFIRE PIP	0	0	0	15769	20165	17034	9494	0	0	62462

and an extended range boost sustain rocket motor. The Longbow HELLFIRE PIP consists of the Longbow HELLFIRE Home-on-Jam (HOJ) and Counter-Active Protection survivability. The weapon system is employable by day or night, in adverse weather, and in countermeasures environment. The HOJ and CAPS objective is to maintain the funds allow for future improvement program studies/demonstrations. The Army TACMS Block 1B (ATACMS Block 1B) development effort will modify the motor section enhancing system performance. These funds also supported participation by Block IA prototype missiles in the Joint Precision Strike Demonstration (JPSD). Further, these Mission Description and Budget Item Justification: Expanding regional power threats require an evolutionary improvement program to maintain the effectiveness of the TACMS Block IA development effort will integrate Global Positioning System (GPS) technology into the guidance system of the Army TACMS Block I missile to provide fragmentation), IFF capability, increased field of view and target acquisition range, and development of mission specific rocket motors such as a short range training motor Longbow missile's low vulnerability and susceptibility to existing and future battlefield jammer threats and "hard kill" Active Protection System (APS) threats. The Army qualification tests (SQT) of the HELLFIRE II insensitive munitions (IM) rocket motor under various environments and for product improvements to the Laser HELLFIRE Missile Systems such as countermeasure improvements to respond to changing threats, air-to-air capability improvements, a multi-mode warhead (shaped charge/blast more accurate information for orientation of the missile in position and azimuth. The payload quantity of M74 anti-personnel/anti-materiel (APAM) bomblets will be HELLFIRE, Army TACMS, TOW and Hydra 70 Systems. The HELLFIRE PIP funding will be utilized to conduct component qualification tests (CQT) and system System (CAPS) improvements. The Longbow HELLFIRE missile provides a fire-and-forget capability, greatly increasing weapon system effectiveness and aircraft reduced resulting in a range approximately twice that of the current Block I missile. The inherent GPS accuracies will be achievable independent of range, thereby

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Exhibit R-2 (PE 0203802A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY

7 - Operational System Development

PE NUMBER AND TITLE Programs

February 1997

0203802A Other Missile Product Improvement

D2MT provides for the operational testing of the Army TACMS Block IA Program. The TOW PIP provides advances in the day/night sight improvements, fire control and allows for TOW to continue to be integral to the strategic principle of forward presence. Included in this PIP are missile improvements to include a lethality effort against payload as Block 1A (approximately 310 M74 bomblets). The ATACMS Block 1B will maintain the current system effectiveness of the Block I and IA systems. Project missile improvements. Improvements are required to maintain the infantry's capability to support the US Army mission of crisis response to regionally based threat and and missile software, providing the system capability of achieving ranges approximately one and one-half times that of the Block 1A. The Block 1B will carry the same Infrared (FLIR) technology to upgrade the current TOW Target Acquisition and Fire Control subsystems. These projects support development of upgrades to current new/evolving threats and the Improved Target Acquisition System (ITAS). The ITAS is a technology insertion program using Second Generation Forward Looking production vehicles and are appropriately funded in this budget activity, 7.

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Exhibit R-2 (PE 0203802A)

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RDT&E BUDGET ITEM JUST	TEM JUS	TIFICA	ION S	HEET (F	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	797
вирсет Астіvіту 7 - Operational System Development	nt		PENI 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	Οτιτιε Other Missile Product Improvement	sile Proc	luct Impr	ovement		PROJECT D045
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D045 HELLFIRE Product Improvement Program	0	3818	0	0	0	0	22970	18528	0	505055
A. Mission Description and Budget Item Justification: Project D045- HELLFIRE Product Improvement Program: The Army intends to use funding to conduct component qualification tests (CQT) and systems qualification tests (SQT) of the HELLFIRE II insensitive munitions (IM) rocket motor under various environments. new IM rocket motors will be much less susceptible to catastrophic failure from external stimuli such as bullet impact, fire, fragment impact and sympathetic detonation CQTs and SQTs of the IM rocket motors are needed for the safety of those who transport and store the missiles.	ication: Proj qualification to ole to catastropi led for the safe	ect D045- Hists (SQT) of hic failure fry y of those w	ELLFIRE I the HELL! om external	Product Im FIRE II inserstimuli such t and store t	D045- HELLFIRE Product Improvement Program: The Army intends to use funding to conduct (SQT) of the HELLFIRE II insensitive munitions (IM) rocket motor under various environments. The failure from external stimuli such as bullet impact, fire, fragment impact and sympathetic detonation. It those who transport and store the missiles.	rogram: T ions (IM) ro pact, fire, fr	he Army int cket motor u agment impa	The Army intends to use funding to conduct rocket motor under various environments. The fragment impact and sympathetic detonation.	unding to cost environmes athetic deto	nduct nts. The nation.
Acquisition Strategy: It is planned to award the HELLFIRE II Insensitive Munitions rocket motor as a Letter Contract on a Cost Plus Fixed Fee (CPFF) basis.	HELLFIRE II	Insensitive	Munitions re	ocket motor	as a Letter C	ontract on a	Cost Plus Fi	ixed Fee (CP	FF) basis.	20:
FY 1996 Accomplishments: Project not funded in FY 96	in FY 96									
FY 1997 Planned Program:	Research/Smal	l Business Te	:chnology T	ransfer (SB	IR/STTR) pro	ograms.				
FV 1998 Planned Program: Project not funded in FY 98	n FY 98									
FY 1999 Planned Program: Project not funded in FY 99	n FY 99									B
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996		FY 1997 0 3818	FY 1998 15853	FY 1999 20247	47			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		0		3818	0		0			
Change Summary Explanation: FY 98/99 funding moved to newly	g moved to nev		ed Project I	D785 Longb	established Project D785 Longbow Hellfire PIP (FY 98 -15853/FY 99 -20247).	JP (FY 98 -	15853/FY 9	9 -20247).		
Project D045			Page 3 of 24 Pages	34 Pages			Exhibi	Exhibit R-2 (PE 0203802A)	203802A)	
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RDT&E BUDGET ITEM JUS	TEM JUS	TIFICAT	TION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Feb	February 1997	266
вирвет Астіvітү 7 - Operational System Development	ut T		PE NU 020.	PE NUMBER AND TITLE 0203802A Othe Programs	TITLE Other Mis	D ТІТLE Other Missile Product Improvement	t Impr	ovement		PROJECT D045
C. Other Program Funding Summary Missile Program Army	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001 E	FY 2002	FY 2003	Compl	Cost
C70100 Laser HELLFIRE	50740	107968	14962	16928						2079718
D. Schedule Profile	FY 1996		F3	FY 1997		199		Ĺ	FY 1999	
Initiate CQT Initiate SQT	2	4	1 2	m	4 X	2 3	4 X	7	ю	4
Project D045			Page 4 of 24 Pages	Pages			Exhibit	Exhibit R-2 (PE 0203802A)	3802A)	
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RDT&E PROGRAM ELEMENT/PI	ROJECT COST BREAKDOWN (R-3)	COST BR	EAKD	OWN (R-	3)	DATE Fe	February 1997	766
вирдет Астіуіту 7 - Operational System Development		PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE A Other S	Missile P	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	эгоvетеп		РКОЈЕСТ D045
A. Project Cost Breakdown Contractor Testing In-house SBIR/STTR Total	FY 1996	EY 1997 3325 400 93 3818	1997 3325 400 93 3818	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
HELLFIRE LC/CPFF Mar 97 TBD Systems Limited	TBD			3325			39423	42748
Liability SBIR/STTR PY Sunk Cost		366000		93				93
Support and Management Organizations In-House Spt PY Sunk Cost Test and Evaluation Organizations		93739		400			2075	2475 93739
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation		366000 93739		3418			39423 2075	408841 96214
Total Project		459739		3818			41498	505055
Project D045	Page	Page 5 of 24 Pages	S		Exhi	Exhibit R-3 (PE 0203802A)	0203802A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	‡		PE NI 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	sile Prod	luct Impr	ovement		PROJECT D045
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2MT ATACMS BLK IA Oper Tests	3397	378	0	0	0	0	0	0	0	3775
A. Mission Description and Budget Item Justification: Project D2MT- ATACMS BLOCK 1A Operational Tests: This project finances the direct costs of planning and conducting operational testing and evaluation of the Army Tactical Missile System Block IA system by the Operational Test and Evaluation Command (OPTEC). The Army TACMS is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation (IOTE) in starting FY 96 in support of Milestone III full production decisions. Operational Testing is conducted under conditions similar to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides the Army leadership with independent test and evaluation of system effectiveness and suitability.	ation: Project f the Army Tales a system with anducted under independent:	t D2MT- A octical Missii a dedicated r conditions lest and eval	TACMS B) le System B Initial Oper similar to thuation of sy	LOCK 1A (lock IA systational Test ose encount system effect	ect D2MT- ATACMS BLOCK 1A Operational Tests: This project finances the direct costs of planning factical Missile System Block IA system by the Operational Test and Evaluation Command (OPTEC). Then a dedicated Initial Operational Test and Evaluation (IOTE) in starting FY 96 in support of Milestone III ler conditions similar to those encountered in actual combat with typical user troops trained to employ the test and evaluation of system effectiveness and suitability.	Tests: This perational T on (IOTE) is all combat will uitability.	project final est and Eval n starting FY ih typical us	nces the dire uation Comi '96 in suppo er troops trai	ct costs of p nand (OPTI ort of Milest ined to empl	
Acquisition Strategy: Not applicable.										
FY 1996 Planned Accomplishments: • 3397 Conduct Army TACMS Block IA operational testing. Total 3397	sk IA operation	nal testing.								
 FY 1997 Planned Program: 368 Complete Army TACMS Block IA operational testing. 10 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Total 378 	ock IA operationsearch/Small	onal testing. Business Te	chnology T	ransfer (SB)	(R/STTR) Pr	ograms.				
FY 1998 Planned Program: Project not funded in FY 1998	FY 1998									
FY 1999 Planned Program: Project not funded in FY 1999	FY 1999									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 3483 3582		390 378	FY 1998 0	FY 1999 0	6J 0			
Adjustificity to Appropriated Value FY 1998 Pres Bud Request		3397		378	0		0			

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Exhibit R-2 (PE 0203802A)

Project D045

RDT&E BUDGET ITEM JUST	TEM JUSTIFICATION	IFICATION SHEET (R-2 Exhibit)	DATE February 1997	rv 1997
вирдет астіvіту 7 - Operational System Development	lent	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	Product Improvement	PROJECT D2MT
C. Other Program Funding Summary: There are no other related RDTE or other Appropriation efforts.	re are no other related RDTE or o	other Appropriation efforts.	30000	
D. Schedule Profile	FY 1996	,	8661	
Begin Army TACMS Block IA Operational Testing Complete Army TACMS Block IA Operational Testing	X* X	4	2 3 4 1 2	£
*Milestone completed				
Project D2MT	Pa	Page 7 of 24 Pages	Exhibit R-2 (PE 0203802A)	2A)
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JT&E PROGRAM ELEMENT/	PROJECT COST BREAKDOWN (R-3)	R-3) DATE February	y 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Other Missile Programs	பாட் Other Missile Product Improvement	PROJECT D2MT
A. Project Cost Breakdown Operational Testing SBIR/STTR Total	FY 1996 FY 1997 FY 1998 3397 3397 378	FY 1999	
B. Budget Acquisition History and Planning Information:			
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property: None Support and Management Property: None	Total Prior to FY 1996 FY 1996 FY 1997	Budget to FY 1999 Complete	t to Total ete <u>Program</u>
Test and Evaluation Property Misc. SBIR/STTR	3397 368	88	3765
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	3397 378 3397 378		3775 3775
Project D2MT	Page 8 of 24 Pages	Exhibit R-3 (PE 0203802A)	2A)

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	LION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	997
ВÚDGET АСТІИІТУ 7 - Operational System Development	,		PE NI 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	sile Proc	duct Impi	ovement		РРОЈЕСТ D304
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D304 Army TACMS BLK IA	22045	4376	0	0	0	0	0	0	0	88110

missile in position and azimuth. The payload quantity of M74 anti-personnel/anti-materiel (APAM) bomblets will be reduced resulting in a range approximately twice that A. Mission Description and Budget Item Justification: Project D304 - ARMY TACMS BLOCK IA: The Army TACMS Block IA development effort will integrate surface missile system launchers. Further, these funds will allow for future improvement program studies/demonstrations pertaining to technology advancements, payload Global Positioning System (GPS) technology into the guidance system of the Army TACMS Block I missile to provide more accurate information for orientation of the program incorporates the improved guidance capability. The improved missile will destroy high value targets and be especially suited for destroying enemy surface-toparticipation by Block IA prototype missiles in the Joint Precision Strike Demonstration (JPSD). The Block IA Engineering and Manufacturing Development (EMD) of the current Block I missile. The inherent GPS accuracies will be achievable independent of range, thereby enhancing system performance. Funds also supported variants, propulsion, guidance and control, and fire control improvements.

Acquisition Strategy: The Army TACMS Block IA program develops an extended range version of the currently fielded Army TACMS Block I missile. This is achieved by reducing the bomblet payload and adding the Global Positioning System into the guidance to maintain system accuracy. A sole source thirty-six month EMD contract was awarded to Loral (now Lockheed Martin Vought). Low Rate Initial Production (LRIP) began in FY 1996.

FY 1996 Planned Accomplishments:

- Block IA EMD (third increment). 13487
- Production Prove-Out Test (PPT), Pre-production Qualifications Test (PPQT) and support Operational Test (OT), continue vibration and road test 8116
 - Studies, development, and validation of future improvement programs. 442
- 22045

FY 1997 Planned Program:

- Block IA EMD (fourth increment). 3048
- Complete testing activities, data analysis and reporting. 1126
- Studies, development, and validation of future improvement programs. 100
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

FY 1998 Planned Program: Project not funded in FY 1998

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SI	HEET (R	1-2 Exhil	bit)		DATE	Fobrusey 1007	700
вирсет астіvітү 7 - Operational System Development	ı,		PE NU 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	sile Proc	luct Impi	rovemen	nuary I	PROJECT D304
FY 1999 Planned Program: Project not funded in FY 1999	FY 1999									
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 22813 23454 -1409 22045	FY	FY 1997 4469 4376 4376	FY 1998 0	FY 1999 0	0 0 0			
C. Other Program Funding Summary	FV 1006	EV 1007	1000	0001	2000				To	Total
Missile Procurement, Army C98501 ATACMS	69533	160815	FX 1998 97814	102960	100080	FY 2001 111620	FY 2002 13846	FY 2003	Complete	<u>Cost</u> 656668
D. Schedule Profile	FY 1996 2 3	4	FY 1 2	FY 1997 2 3	4	FY 1998 2	3 4	1 2	FY 1999	4
Begin PPT Complete PPT Block IA LRIP Decision Begin PPQT Complete PPQT Begin Operational Testing Complete Decrational Testing Complete Block IA EMD Block IA Milestone III Decision	* * * *	* *	**							
*Milestone completed										
Project D304		P	Page 10 of 24 Pages	4 Pages			Exhibit	Exhibit R-2 (PE 0203802A)	203802A)	
									200002	

RD	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM EL	EMENT/P	ROJEC	T COST	BREA	KDOWN	(R-3)	να	DATE Februa	February 1997
вирсет АстіVITY 7 - Operational System Development	ıl System De	velopmen	ţ		PE NUA 0203 Prog	PE NUMBER AND TITLE 0203802A Othe Programs	ne her Miss	ile Produ	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	ement	PROJECT D304
A. Project Cost Breakdown Contractor Engineering Support Developmental Test & Evaluation Project Management Personnel SBIR/STTR Total	reakdown ring Support t & Evaluation tt Support tt Personnel			EY 1996 10100 8116 1824 2005	V 1996 10100 8116 1824 2005	FY 1997 2400 1126 153 595 102 4376	FY 1998		FY 1999		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Vehicle Date E	tion History and izations Contract Method/Type or Funding Vehicle	Planning Info Award or Obligation Date	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget t Complet	Total Program
Loral Vought Sys Loral Vought Sys SBIR/STTR In-House Spt	SS/CPIF SS/CPIF	Nov 93 Mar 94	8041	8041 52850	8041 40350 2531	10100	2400 102 53				8041 52850 102 3966
Sys Eng & Tech Asst Contracts and Program Mgt In-House Spt					883 3619	442 2005	100				1425
Test and Evaluation Organizations: None	on Organizations	:: None		•							
Project D304				P	Page 11 of 24 Pages	t Pages			Exhibit R	Exhibit R-3 (PE 0203802A)	02A)

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duct Improvement Budget to Complete Complete 7649 FY 1998 FY 1999 Complete 7649 72603	RDT&EP	ROGRAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST B	REAKDO	JWN (R-	3)	DATE	February 1997	790
Furnished Property Contract	вирсет Астіvітץ 7 - Operational Syste	em Developme	nt	PE NUMBER 0203803 Progran	RAND TITLE 2A Other ns	Missile P	roduct Im	provemer		PROJECT D304
Vehicle	Government Furnished Proj Contrac			E						
Management Property: None	Item or Fund Description Vehicle	ing Obligation Date	Delivery <u>Date</u>	1 otal Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
MIPR 131 1036 0	Support and Management P Test and Evaluation Propert White Sands Missile Range	rty: None roperty: None ty		4490	5472	840				10802
ch MIPR ARL) MIPR MIPR MIPR 1120 429 61 1020 429 61 1020 429 61 1020 695 1020 2447 695 1020 3447 695 1				131	1036	0 20				1167
uct Development 50922 11482 2555 sort and Management 4502 2447 695 and Evaluation 6265 8116 1126 61689 22045 4376	r (RTTC) Research atory (ARL)			374	679	175				1228
	Subtotal Product Development Subtotal Support and Managen Subtotal Test and Evaluation Total Project	t ment		50922 4502 6265 61689	2447 2447 8116 22045	2555 695 1126 4376			64959 7644 72603	15507
Page 12 of 24 Pages		·								
	Project D304			Page 12 of 24 Pages	So		Exhil	bit R-3 (PE ()203802A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FM JUS	TIFICA	TION S	HEET (R	≀-2 Exhi	bit)		DATE FeI	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	ıt		PEN 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	TITLE Other Mis	sile Proc	luct Impr	DE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs		PROJECT D336
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D336 TOW Product Improvement Program	29995	1302	1255	1242	0	0	0	0	0	348888

guidance, control, reduced missile time of flight), and Improved Target Acquisition System (ITAS). The ITAS will provide improved target detection and acquisition range, A. Mission Description and Budget Item Justification: Project D336 -TOW Product Improvement Program: Provides for continued development of improvements to the TOW missile system. Improvements are required to maintain the Infantry's capability to support the US Army mission of crisis response to regionally based threats improved probability of hit and enhanced fire control capabilities that will upgrade the anti-armor capability of light forces using the TOW system, allowing the Army to and allow TOW to continue to be integral to the strategic principle of forward presence. Included in this PIP are missile improvements (seeker, lethality, aerodynamics, own the night and providing compatibility with the TOW next generation missile. The ITAS design provides simple growth potential for digitization applications.

Acquisition Strategy: The ITAS is a technology insertion program utilizing Second Generation FLIR technology to upgrade the current TOW Target Acquisition and Fire Control subsystems. The ITAS EMD contract effort was competitively awarded to prime contractor Texas Instruments on a cost plus incentive fee/award fee (CPIF/AF) contract. The Low Rate Initial Production (LRIP) contract will be awarded sole source to the EMD contractor on a fixed price incentive fee (FPIF) basis. Full Rate Production (FRP) contracts will be awarded on a firm fixed price (FFP) basis and may be awarded through competition or sole source solicitation.

FY 1996 Planned Accomplishments:

- Continued ITAS EMD. 14483
- Continued ITS. 1855
- Completed pilot line. 096
- LRIP Approved. 466
- Delivered prototypes for PPQT
 - Conducted PPQT. 5927
- Delivered 3 prototypes for IOTE.
 - Completed IOTE 1912
- Continued missile enhancement efforts against the evolving threat. 4059
- 29995

Project D336

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Exhibit R-2 (PE 0203802A)







	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhib	t) DATE	February 1997	76
вирдет АстіvітY 7 - Operational	вирдет астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Othe Programs	o TiT∟E Other Missi	ਹ ਸ਼ਸ਼ਾਂ Other Missile Product Improvement		PROJECT D336
FY 1997 Planned Program:	Review IOTE reports. Continue missile enhancement efforts against the evolving threat [to include Counter Active Protection System (CAPS)] - Develop analytical/simulation model - Design long stand-off warhead - Design electrical active/passive measures - Design/develop adaptive warheads for target variety Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) programs. rogram: Continue missile enhancement efforts against the evolving threat [to include Counter Active Protection System (CAPS)] - Update analytical/simulation model based on latest intelligence reports - Design/test long stand-off warhead - Demonstrate electrical active/passive measures - Test/iterate adaptive warheads for target variety	ig threat [to include] hnology Transfer (S) g threat [to include] elligence reports	Counter Active F BIR/STTR) prog Counter Active P	rotection System (CAPS)] rams.		
FY 1999 Planned Program: 1242 Continu Updat Test l	rogram: Continue missile enhancement efforts against the evolving threat (to include Counter Active Protection System (CAPS)) Update analytical/simulation model based on latest intelligence reports Test long stand-off warhead Test electrical active/passive measures Demonstrate/iterate adaptive warheads for target variety	g threat (to include (Iligence reports y	Counter Active P	rotection System (CAPS))		
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Budget Request	Summary FY 1996 Budget 27686 28463 28463 opriated Value +1532 t Request 29995	FY 1997 1340 1302 1302	F <u>Y 1998</u> 1242 1255	FY 1999 1225 1242		
Project D336	Pa	Page 14 of 24 Pages		Exhibit R-2 (PE 0203802A)		for 143

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEN	I JUS	TIFICA.	TION SE	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	766
вир вет Асті VITY 7 - Operational System Development	nt int			PENU 020 Pro	PE NUMBER AND TITLE 0203802A Othe Programs	TITLE Other Miss	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	uct Impr	rovemen		PROJECT D336
C. Other Program Funding Summary	įr.	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Complete	Total Cost
C61700 TOW Mods		40728	16	62755	63774	64437	63835	67682	29896	239600	1167688
D. Schedule Profile	_ (FY 1996		F.	FY 1997	•	FY 1998			7 199	
Initiate ITAS PPQT LRIP Decision IOT&E ITAS Milestone III Review * Milestone Completed		· *×	* * *	-	n	- ×	4	J	<u>-</u>	n	4
Project D336				Page 15 of 24 Pages	4 Pages			Exhibi	Exhibit R-2 (PE 0203802A))203802A)	
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PENNMER AND TITLE PCO 8002A Other Missile Product Improvement Programs Programs	RDT&E PROGRAM ELEMENT/	OGRAM EL		PROJECT (COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
Page	вирбет Астіvітү 7 - Operational System	Developme	ıţ		PE NUMBER 0203803 Progran	RAND TITLE 2A Other ns	Missile P	roduct Im	proveme	te .	PROJECT D336
19236 744 731 722 72	A. Project Cost Breakdown			FY 1996	FV	1997	FV 1998	FV 1000			
State Stat	Primary Hardware Development			13736		744	721	771			
Page	Program Management Support			8095		306	306	717			
STTR Sep 93 130 125 124	Developmental Test and Evaluati	ion		9566		237	200	300	0_		
Contract Contract	Training Development			1855			017	203			
Part	SBIR/STTR					23					
runing Organization History and Planning Information runing Organizations runing Organizations Countage Performing Project Total runnent Nethood/Type Award or Performing Performing Prior to <	Total			29995		1302	1255	1242			
ruming Organizations actor or Contract Contract Total ruming Actor or Contract Contract Total ruming Actor or Contract Contract Performing Project Project Total ruming Actor or Funding Obligation Activity Office Date Date Date EAC EV.1996 FY 1996 FY 1996 FY 1996 FY 1999 Complete C	B. Budget Acquisition History	and Planning In	formation								
actor or Courtact Courtact Method/Type Award or Obligation Activity Project Office or Full Activity Total American Activity Project Office or Full Activity Total American Activity Project Office or Full Activity Total American Activity Office or Full Activity Project Office or Full Activity FY 1996 Office or Full Activity FY 1996 Office or	Performing Organizations										
runnent Method/Type Award or Original Performing Project Total ming or Funding Obligation Activity Office Prior to net Development Organizations Sep 93 59998 59998 145427 FY 1996 FY 1996 FY 1996 FY 1996 FY 1996 Complete Progenizations nmx Cost TBD TBD TBD TATZ 1855 TATZ 1855 TATZ TA											
Table Capital Capita			Performing	Project	Total						
tity Vehicle Date EAC EAC EV 1996 FV 1996 FV 1998 FV 1999 FV 1999 Complete Production nnc Coard nnc Coard Apr 93 5998 145427 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1664 1666 </td <td></td> <td></td> <td>Activity</td> <td>Office</td> <td>Prior to</td> <td></td> <td></td> <td></td> <td></td> <td>Budget to</td> <td>Total</td>			Activity	Office	Prior to					Budget to	Total
Let Development Organizations nnck Cost Apr 93 145427 16604 nncy, TX, TX, TX, TBD TBD 7275 1855 COM, Ft. TBD TBD 442 2632 721 731 721 SYTR About and Management Organizations 46912 23 721 721 SYTR About Cost 1649 1175 151 158 163 CAWS, RSA PO Pool 1649 1175 151 148 149 MA, RSA, AL PO Pool 1242 461 461 461 462 461 462 <	Activity Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Propram
Instruments	Product Development Organiza	ations									- P. C.
Instruments, C/CPIF/AF Apr 93			29998	86665	145427						145427
Name					49394	10604					59998
COM, MIPR MIPR Sep 93 7275 1855 do, FL TBD TBD TBD T21 SYTR art and Management Organizations nr and Management Organizations 442 2632 721 731 721 CAWS, RSA PO 1649 1175 151 158 163 4 CAWS, RSA PO PO 10359 3972 147 148 149 1. MM, RSA, AL PO TBD 1242 461 147 148 149 1. MM, RSA, ML PO PO 9017 6956 260 218 209 1. MA, APG, MD PO 9017 6956 260 218 209 1. TX TX PO Poge 16 of 24 Pages Exhibit R-3 (PE 0203802A) 1.	X.										
TBD TBD		Sep 93			7275	1855					9130
STTR	7,7	TRD			440	2630	100	ţ	i		
2.7 mic Cost 46912 Intervent Cost CAWS, RSA PO IM, RSA, AL PO Page 16 of 24 Pages Exhibit R-3 (PE 0203802A)	STTR				7++	7607	73	/31	17/		5247
mk Cost 46912 1175 151 158 163 CAWS, RSA PO 1649 1175 151 158 163 IM, RSA, AL PO TBD 10359 3972 147 148 149 Ind Evaluation Organizations 42221 461 42221 42221 42221 509 IM, APG, MD PO 9017 6956 260 218 209 ITX TX Page 16 of 24 Pages Exhibit R-3 (PE 0203802A)	Support and Management Orga	anizations					64				73
CAWS, RSA PO 1649 1175 151 158 163 IM, RSA, AL PO 10359 3972 147 148 149 IM, RSA, AL PO 1242 461 Ind Evaluation Organizations 42221 IM, APG,MD PO 9017 6956 260 218 209 IOM, Ft MIPR 1691 IX Page 16 of 24 Pages Exhibit R-3 (PE 0203802A)	PY Sunk Cost				46912						01007
IM, RSA, AL PO 10359 3972 147 148 149 Ind Evaluation Organizations 1242 461 149 149 149 Ind Evaluation Organizations 42221 461 6956 260 218 209 IM, APG, MD PO 9017 6956 260 218 209 OM, Ft MIPR 1691 1691 Fage 16 of 24 Pages Exhibit R-3 (PE 0203802A)					1649	1175	151	158	163		40912
TBD 1242 461					10359	3972	147	148	149		3230
### 42221 PO					1242	461					1703
PO 9017 6956 260 218 209 MIPR 1691 Page 16 of 24 Pages Exhibit R-3 (PE 0203802A)	Test and Evaluation Organization	ons									50/1
PO 9017 6956 260 218 209 MIPR 1691 Page 16 of 24 Pages Exhibit R-3 (PE 0203802A)					42221						42221
MIPR 1691 $Page~16~of~24~Pages$ Exhibit R-3 (PE 0203802A)					9017	9569	260	218	209		16660
Page 16 of 24 Pages						1691					1691
1 46 10 0/ 271 4860	Project D336			Page	16 of 24 Pag	8		Į	ביי לי מייי		
				1 450	2007 27 1 08	3		EXU	OIL K-3 (PE	U2U38U2A)	

S.	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM EL	EMENT/PR	ROJECT	COST B	REAKDO	DWN (R-	3)	DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	al System De	evelopmen	ıt		PE NUMBER AN 0203802A Programs	PE NUMBER AND TITLE 0203802A Other Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	roduct Im	provemer		PROJECT D336
Contractor or Government Performing Activity Misc.	Contract Method/Type or Funding Vehicle TBD	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to <u>FY 1996</u> 1156	<u>FY 1996</u> 649	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 1805
Government Furnished Property: None.	ished Property:	None.									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	evelopment 1d Management ?valuation				202538 60162 52394 315094	15091 5608 9296 29995	744 298 260 1302	731 306 218 1255	721 312 209 1242		219825 66686 62377 348888
Project D336				Pag	Page 17 of 24 Pages	sə.ə.			Exhibit R-3 (PE 0203802A)	0203802A)	
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RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	Į.		PE N 02(PE NUMBER AND TITLE 0203802A Othe Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	sile Prod	uct Impi	rovement		РРОЈЕСТ D701
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D701 Hydra 70 Program Improvement Program	9483	0	0	0	0	0	0	0	0	9483
A. Mission Description and Budget Item Justification: The Hydra-70 product improvement program (PIP) will qualify a non-developmental item (NDI) 2.75-inch rocket motor with composite propellant to the Hydra-70 performance baseline on the Apache helicopter. The composite propellant is intended to result in improvements over the current insensitive munitions (IM) performance levels of the MK66 rocket motor and will open the market base for the 2.75-inch rocket.	cation: The Fra-70 perform	Iydra-70 pro ance baselir f the MK66	oduct improvie on the Aprovectet mote	vement prograche helicop r and will of	ram (PIP) wi ster. The con	Il qualify a n nposite prope et base for th	on-develop ellant is inte e 2.75-inch	mental item nded to resu rocket.	(NDI) 2.75- It in improv	nch sments
Acquisition Strategy: The project office will manage the quali		fication effc	rt in accord	ance with Co	fication effort in accordance with Congressional direction.	direction.				
FY 1996 Planned Accomplishments: 1560 Engineering support 990 Phase I qualification 6933 Phase II qualification Total 9483										
FY 1997 Planned Program: Project not funded in FY 97	1 FY 97									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 9727 10000		FY 1997 0	FY 1998 0	FY 1999 0	0 66			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		-517 9483	3 -	0	0		0			
C. Other Program Funding Summary: Not applicable.	licable.									

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Project D701

Exhibit R-2 (PE 0203802A)

RDT&E BUDGET IT	EM JUSTIFICATI	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	266
вир бет асті vіту 7 - Operational System Development	ţ	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs		PROJECT D701
D. Schedule Profile	FY 1996	FY 199	FY 199	
Phase I: Concept formulation & acqn strategy Industry survey Award rocket motor contract Rocket motor deliveries Shoot off Phase II: rocket motor deliveries		X X X X X X X X X X X X X X X X X X X	4 2 3	4
Project D701	Pa	24 Pages	Exhibit R-2 (PE 0203802A)	
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RDT&E PROGRAM ELEMENT/P	/PROJECT COST BREAKDOWN (R-3)	COSTB	REAKD	OWN (R-	3)	DATE	February 1	1997
вирсет астіліту 7 - Operational System Development		PE NUMBER AND TITLE 0203802A Othe Programs	AND TITLE 2A Other ns	Missile P	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	эгоvетег		PROJECT D701
A. Project Cost Breakdown Project management support Engineering support Test support Rocket motor procurement Total	FY 1996 1427 1823 3533 2700 9483		FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations								
Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations To be determined TBD			2700					2700
Support and Management Organizations Industrial			316					316
Operations Cmd Naval Surface			544					544
warfare Cntr ARDEC: Picatinny			150					150
MICOM TBD TBD			1519					1519
Test and Evaluation Organizations								
IHD/NSWC AVREDEC/PM			231 270					231
APACHE			003					
MICOM			2039					2039
	C	- 4 x C 30 0C 2			Ĺ	L 0 0		
Figlect D701	Гир	rage 20 of 24 rages	Ses		EXUIT	EXNIBIT K-3 (PE UZU38UZA)	U2U38U2A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT COST BREAKD	OWN (R-3)	DATE	February 1997	26
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203802A Other Programs	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	nprovemen		PROJECT D701
Government Furnished Property: Not applicable Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY 1996 2700 3250 3533 9483	FY 1997 FY 1998	FY 1999	Budget to Complete	Total 2700 3250 3533 9483
Project D701	Page 21 of 24 Pages	Ä	Exhibit R-3 (PE 0203802A)		Item 143
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RDT&E BUDGET ITEM JU	TEM JUS	TIFICA	TION S	HEET (F	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	Jt.		9E N 020	PE NUMBER AND TITLE 0203802A Othe Programs	отпте Other Missile Product Improvement	sile Proc	duct Impr	ovemen		PROJECT D785
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D785 Longbow HELLFIRE PIP	0	0	0	15769	20165	17034	9494	0	0	62462
A. Mission Description and Budget Item Justification: Project D785 - Longbow HELLFIRE Product Improvement Program: The Longbow HELLFIRE Product Improvement Program (PIP) provides for the development of Home-on-Jam (HOJ) and Counter Active Protection System (CAPS) initiatives in order to maintain the Longbow HELLFIRE missile's low susceptibility to existing and future battlefield jammer threats (self-protection jammers, escort jammers, and stand-off jammers) and evolving "hard kill" Active Protection Systems threats. The program will consist of defining threat systems and operational requirements; implementing and demonstrating the designs in simulations, warhead, tower hardware-in-the-loop and captive flight testing; and missile flight tests. This is a new project to support improvement efforts for Longbow Hellfire.	ication: Proj lopment of H to existing an eats. The pro re-in-the-loop	ect D785 - I ome-on-Jam i future batti gram will co and captive	ongbow HI (HOJ) and (leffeld jamm nisist of deffi flight testin	ELLFIRE P Counter Acti er threats (se ning threat s g; and missil	roduct Impi ve Protection elf-protection ystems and o le flight tests	ovement Prostem (C. jammers, e perational r	rogram:_Th APS) initiati scort jamme equirements; ew project to	e Longbow ves in order rs, and stand implementi support im	HELLFIRE to maintain 1-off jamme ing and dem iprovement (Product the rs) and onstrating
Acquisition Strategy: Development for the HOJ and CAPS initiatives will be done by Missile Command labs and contract development by the Longbow Limited Liability Company (sole-source). Solicitation is planned for issuance 10 months prior to contract award and will include each initiative, HOJ and CAPS, as a separate element. Each effort shall ultimately result in an Engineering Change Proposal (ECP) suitable for incorporation in the on-going Longbow production contract as well as providing the potential for retrofit to fielded systems.	and CAPS inir r issuance 101 nge Proposal	tiatives will nonths prior (ECP) suital	be done by I to contract ole for incor	Vissile Comi award and w poration in th	mand labs an till include eg ne on-going l	d contract d ich initiative ongbow pr	evelopment 2, HOJ and C oduction cor	by the Long APS, as a se itract as well	bow Limite eparate elem I as providir	d Liability tent. Each ig the
FY 1996 Accomplishments: Project not funded in FY 96 FV 1007 Planned Program: Project not funded in FV 07	n FY 96									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
 FY 1999 Planned Program: 15769 Maintain missile low vulnerability and susceptibility to existing and future battlefield jammer threats and "hard-kill" threats Preliminary analysis and simulation for Home-on-Jam (HOJ) and Counter Active Protection System (CAPS) Design trade studies for HOJ and CAPS Preliminary design of HOJ and CAPS Initiate detail design of HOJ and CAPS Total 15769	ubility and sus nulation for F J and CAPS and CAPS J and CAPS	ceptibility to	o existing an n (HOJ) and	d future batt) Counter Act	lefield jamm live Protectic	or threats an m System (C	d "hard-kill" 2APS)	threats		
Project D785			Page 22 of 24 Pages	24 Pages			Exhibi	Exhibit R-2 (PE 0203802A)	203802A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIFI	CATION	SHE	T (R-	2 Exhik	it)		DATE Feb	February 1997	161
вирсет астіvіту 7 - Operational System Development			PE NUMBER AND TITLE 0203802A Othe Programs	R AND TI	rre her Miss	sile Prod	uct Impr	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	1	PROJECT D785
B. Project Change Summary Previous President's Budget Appropriated Value	Ħ	FY 1996 0	FY 1997		FY 1998 0	FY 1999	0			
Adjustments to Appropriated Value Current Budget Submit/President's Budget		0		0	0	15769	6			
Change Summary Explanation: Funding - FY97 Pres Bud For FY98 Pres Bud, D785 order to fund higher priori	Funding - FY97 Pres Bud contained \$15853/FY98 and \$20247/FY99 in D045 Hellfire PIP which supported Longbow Hellfire PIP. For FY98 Pres Bud, D785 Longbow Hellfire PIP was established, however, program has been delayed one year (+\$15769/FY99) in order to fund higher priority programs.	contained \$15853/FY98 and \$20247/FY99 in D045 Hellfire PIP which supported Longbow Hellfire PIP. Longbow Hellfire PIP, and the stablished, however, program has been delayed one year (+\$15769/FY99) in ty programs.	33/FY98 au ire PIP was	nd \$2024 s establisl	7/FY99 in I hed, howeve	2045 Hellfir er, program	e PIP which has been de	supported L layed one ye	ongbow He ar (+\$15769	llfire PIP. /FY99) in
C. Other Program Funding Summary	FY 1996 FY	FY 1997 FY 1998		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
C70300 Longbow HELLFIRE	185214 24	249286 264	264725 33	328505	287265	298594	249904	210677	48962	<u>Cost</u> 2164327
D. Schedule Profile	FY 1996	-	FY 1997		-	FY 1998	% r		FY 1999	_
Concept formulation/acq strategy LLL contract award Preliminary analysis and simulation Complete preliminary design Initiate detailed design	1		1			1		· ××		× ×
·										
Project D785		Page 2	Page 23 of 24 Pages	səğt			Exhibit	Exhibit R-2 (PE 0203802A)	03802A)	
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RDT&E PROGRAM ELEMENT/PF	I/PROJECT (COST BREAKDOWN (R-3)	EAKD	OWN (R-	3)	DATE	February 1997	197
вироет Астіvітү 7 - Operational System Development		PE NUMBER AND TITLE 0203802A Othe Programs	A Other S	Missile P	PE NUMBER AND TITLE 0203802A Other Missile Product Improvement Programs	proveme	·	PROJECT D785
A. Project Cost Breakdown Preliminary Hardware Development Program Management Support HWIL/Laboratory/Static Testing Total	FY 1996	FY 1997	766	FY 1998	EX 1999 12321 1982 1466 15769	61 - 21 /2 C		
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract								
Method/Type Award or Pe or Funding Obligation	Project Office	Total Prior to					Budget to	Total
Vehicle	EAC		FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Longbow Limited SS/CPIF Nov 97						12321	34496	46817
Liability Company								
Support and Management Organizations Sys Eng & Tech PO						1030	3403	1133
						635	1772	2407
In-House Spt PO						317	936	1253
Test and Evaluation Organizations Redstone MIPR						1180	2071	6160
Test						1109	39/1	0010
Army Research MIPR						277	2115	2392
Lab (ARL)								
Subtotal Product Development						12321	34496	46817
Subtotal Support and Management						1982	6111	8093
Subtotal Test and Evaluation						1466	9809	7552
Project D785	Page	Page 24 of 24 Pages	S		Exh	Exhibit R-3 (PE 0203802A)	0203802A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE Fel	February 1997	97
вирсет Астіvітץ 7 - Operational System Development	jt.		PE NI 020 Pro	PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	TITLE Ioint Taci RI-TAC)	יב אנושמה אוס דודוב 1208010A Joint Tactical Communications Program (TRI-TAC)	ımunicat			PROJECT D107
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D107 Echelons Above Corps (EAC) Comm	12647	18229	8983	9941	4571	8131	8119	8127	122300	201048
A. Mission Description and Budget Item Justification: A requirement exists to automate Signal Corps unit's capability to manage multiple tactical communications systems in support of battlefield operations. The Integrated System Control (ISYSCON) facility will provide automated, integrated management of the tactical communications network, establish an interface with each technical control facility in the Army Tactical Command and Control System (ATCCS) architecture, and enable automation assisted configuration and management of a dynamic battlefield. ISYSCON is being developed in an evolutionary manner with incremental software releases. A change to the requirements document has added planning and management of satellite resources as a requirement. The ISYSCON has been selected as the baseline for network management system for joint task force use. The Battlefield Spectrum Management (BSM) software has been designated as part of the migration system for DOD use. The work efforts in FY 1996 - FY 1999 support the development of the first three software releases (P0, IOT&E & P2, P3), the fabrication of Low Rate Initial Production (LRIP) prototype, support for an IOT&E, and initiation of Nodal Management, Automatic Network Management and work efforts for follow-on software releases. This program element also supports any development required for PM, Joint Tactical Area Communications System (JTACS) Area Common User Systems (ACUS). This program is assigned to Budget Activity 7 since it includes those development projects, in support of a development acquisition program of the budget or subsequent fiscal year. The ISYSCON Program serves as a baseline foundation to support future network management initiatives tied to and part of the evolution to the Digitized Division and the WIN Architecture.	cation: A rec ntegrated Syst th each technist t of a dynamic planning and se. The Battle ort the develop E, and initiati development vity 7 since it hich have rec ent fiscal year	luirement exists to a em Control (ISYSC cal control facility); battlefield. ISYSC management of sat field Spectrum Mar oment of the first th on of Nodal Manag required for PM, Joi includes those deve eived approval for p. The ISYSCON P.	ists to autom (ISYSCON) acility in the ISYSCON tt of satellite um Managen first three so Managemer PM, Joint Ta se developm val for produ CON Progra	rate Signal C facility will is being dev resources as nent (BSM) oftware relec nt, Automatia tetical Area rent projects cetion throug m serves as	Corps unit's or provide autoride autoride autoride autoride autoride autoride autoride ar requiremens software has software has software has software has in support or support or has baseline for a baseline for	apability to omated, integend and Contract evolutionary ont. The ISY been design & P.2, P. Ranagement sions System of a developither action, cundation to	manage mu grated mana, ol System (, manner wi SCON has I ated as part 3), the fabri and work eff (JTACS) A nent acquisi or production support futu	Itiple tactical gement of the ATCCS) arch the increment open selected of the migra cation of Low forts for followe Common tion program 1 funds have re network mere resulting to the selected of the selected	communica ce tactical intecture, and al software r as the basel tion system in Wate Initia w-on software n User System or upgrades been include nanagement	ions enable eleases. ne for or DOD re ns still in d in the
Acquisition Strategy: The acquisition strategy for the development phase was to competitively award an Engineering Manufacturing Development phase contract (awarded Sep 92). A Milestone III Decision for the Full Production Phase is scheduled for FY 98 following a successful IOT&E in 4QFY97.	the developm duction Phase	ent phase w	as to compet	titively awar following a s	d an Engine successful IC	ant phase was to competitively award an Engineering Manufacturis scheduled for FY 98 following a successful IOT&E in $4QFY97$.	acturing Dev	relopment ph	iase contract	(awarded
FY 1996 Accomplishments: 1046 Initiated systems design for IOT&E software baseline 523 System integration test (P0) 2616 Completed detail design and conducted Developmental Progress Review (DPR)	IOT&E softw	are baseline	l Progress R	eview (DPR						

- Task Force XXI
- Completed BSM Version 4.0
- Began code, unit test, and system test of the IOT&E software baseline Delivered draft training materiel CDR for hardware prototypes
 Developed and deliver draft tech pubs 3178

Project D107

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Exhibit R-2 (PE 0208010A)



		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	76
виреет Астіvіту 7 - Operatio	IVITY Itiona	вирвет Астіvіту 7 - Operational System Development	PENUMBER AND TITLE 0208010A Joint Tactical Communications Program (TRI-TAC)		PROJECT D107
FY 1997 Planned Program:	unned P	rogram:			
	5200	Participation in the Army Warfighter Experiment (AWE) Exercise	Exercise		
•	1543				
•	2489				
•	1869				
•	2043	Initiate systems design for Phase 2 (P2) baseline			
•	3368	Code, unit test, system test for P2 baseline			
•	1272	Continue systems design for P2 baseline			
• 6	445	Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)	ology Transfer (SBIR/STTR)		
lotal	18229				
FY 1998 Planned Program:	nned P	rogram:			
•	506	Conduct DPR for P2 baseline			
•	2160	Conduct code, unit test, system test for P2 baseline			
•	3173	Complete systems design for P2 baseline			
•	1155	P2 software release			
•	1989	Conduct Follow-On Test & Evaluation (FOT&E) for P2			
Total	8983				
FY 1999 Planned Program:	nned P	rogram:			
•	2462	Continue systems design for P3 baseline			
٠	3187	Code, unit test, system test for P3 baseline			
	966	Conduct DPR for P3 baseline			
•	1171	Complete systems design for P3			
•	1000	P3 software release			
•	1125	Support Limited User Test (LUT)			
Total	9941				
Project D107		Pa_{i}	Page 2 of 4 Pages	Exhibit R-2 (PE 0208010A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ET IT	EM JUS	TIFICAT	ION S	HEET (R	1-2 Exhi	bit)		DATE	February 1997	1997
вир бет Асті VITY 7 - Operational System Development	pment			9E NI 020 Pro	PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	тпсе loint Tac श-TAC)	р тпсы Joint Tactical Communications [RI-TAC]	nmunica			PROJECT D107
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request			FY 1996 12972 13368 -721	a	FY 1997 18693 18229 18229	FY 1998 9409 8983	FY 1999 10420	1999 0420 9941			
C. Other Program Funding Summary Other Procurement, Army-2, BX0007		FY 1996 12766	FY 1997 9821	FY 1998 10645	FY 1999 10539	FY 2000 4174	FY 2001 0	FY 2002 0	FY 2003	To Comp	2 Total Cost 47945
D. Schedule Profile	-	FY 1996	4	F)	FY 1997 2 3	4	FY 1998	98	_	FY 1999	4
PDR CDR IOT&E Software DPR IOT&E P2 Software DPR FOT&E P3 Software DPR LUT P4 Software DPR *Milestone Completed	×		×	X X Page 3 of 4 Pages		× ×	· ×	× × ×	X X X X X X X X X X X X X X X X X X X	× × 500	× .
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RDT&E PROGRAM ELEMENT	/PROJECT COST BREAKDOWN (R-3)	ST BREAK	DOWN (R-	DATE	February 1997
BUDGET ACTIVITY 7 - Operational System Development	9E N	PE NUMBER AND TITLE 0208010A Joint Ta Program (TRI-TAC)	E nt Tactical Co TAC)	PE NUMBER AND TITLE 0208010A Joint Tactical Communications Program (TRI-TAC)	PROJECT D107
A. Project Cost Breakdown		FY 1997		FY 1999	
Software Development (Contractor)	10784	16221	7251	8124	
Contractor Engineering Support	292	439	571	584	
Government Engineering Support	1000	923	876	955	
Program Management Support	296	201	285	278	
SBIR/STTR		445			
Total	12647	18229	8983	9941	
B. Budget Acquisition History and Planning Information: Not applicable.	Not applicable.				

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Project D107

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Exhibit R-3 (PE 0208010A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE FeI	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development			PE NI 020	PE NUMBER AND TITLE 0208053A Joint Tactical Ground System (TIARA)	птге oint Tact	lical Gro	und Syst	em (TIAR		PROJECT M635
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
M635 Joint Tactical Ground Station-P3I	0	2077	3195	0	0	0	9935	2491	0	17698

imeliness of TBM warning and cueing. This project supports development of upgrades to current production modifications and is appropriately funded in Budget Activity 7. warning and cueing. JTAGS is designated the in-theater element of the United States Space Command's (USSPACECOM) Theater Event System (TES). The objectives of program. JTAGS was designed as a quick response non-developmental item (NDI) acquisition to satisfy critical in-theater deficiencies in Tactical Ballistic Missile (TBM) evolving Space Based Infrared System (SBIRS), to retain timely dissemination of TBM launch data through sensor technology advances and to increase the accuracy and the JTAGS critical improvements program are to keep pace with modernization of the Department of Defense (DoD) Defense Support Program (DSP) satellites into the A. Mission Description and Budget Item Justification: This project supports development of critical improvements to the Joint Tactical Ground Station (JTAGS)

modification design will be subjected to thorough integration and performance testing to assure suitability for procurement. Once approved for procurement, an upgrade Acquisition Strategy: Critical JTAGS improvements under this project will be developed making maximum use of NDI elements. After selection and assembly, the package will be procured for each of the 5 tactical units. Application of the upgrades will be accomplished at each of the JTAGS operational sites.

FY 1996 Accomplishments: Program not funded in FY 1996

FY 1997 Planned Program:

- 294 Initiate modification to integrate the JTIDS commo net into JTAGS.
- 795 Initiate modification to fuse DSP sensor data with data from other battlefield sensors.
 - 937 Initiate modification to calibrate sensor via static sources or beacons.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
 - Total 2077

FY 1998 Planned Program:

- 782 Complete Fusion Development
- 852 Complete Beacon Development
 - 1561 Complete JTIDS Development
- otal 3195

FY 1999 Planned Program: Program not funded in FY 1999

Project M635

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Exhibit R-2 (PE 0208053A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICAT	ION SHEE	T (R-2 Ex	hibit)		DATE Feb	February 1997	16
BUDGET ACTIVITY 7 - Operational System Development			PE NUMBER AND TITLE 0208053A Join!	AND TITLE	actical Gr) ਸਾਸ਼ Joint Tactical Ground System (TIARA)	em (TIAR		PROJECT M635
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 0 0 0 0	FY 1997 2124 2077 2077	FY 1998 3192 3195		FY 1999 0 0			
C. Other Program Funding Summary Other Procurement Army, OPA-2 BZ8410 Joint Tactical Ground Station BZ8420 Joint Tactical Ground Station Mods	FY 1996 29950 0	FY 1997 0 0	FY 1998 FY 0 2913	FY 1999 FY 2000 0 0 2697 0	00 FY 2001 0 0	EY 2002 0	FY 2003 7422 0	To Compl 13800	Total Cost 51172 5610
D. Schedule Profile Initiate JTAGS Modification Program Initiate Sensor Fusion Development Initiate Beacon Development Initiate JTIDS Development Complete Sensor Fusion Development Complete Beacon Development Complete JTIDS Development	EY 1996 2 3	4	EY 1997 X X X X X	4	1 2 3 X X X X X	998 3 4	1 Z	2 3	4
Project M635			Page 2 of 3 Pages	S		Exhibit	Exhibit R-2 (PE 0208053A)		

RDT&E PROGRAM ELEMENT/	EMENT/P	PROJECT (SOST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	nt		PE NUMBER AND TITLE 0208053A Joint	A AND TITLE	Tactical G	D TITLE Joint Tactical Ground System (TIARA)	stem (TIA		PROJECT M635
A. Project Cost Breakdown Prime Contractor Contract Engineering Support Program Management Support Government Engineering Support Government Furnished Equipment SBIR/STTR Total B. Budget Acquisition History and Planning Information	formation	FY 1996	FY	FY 1997 1664 112 152 98 0 51 2077	FY 1998 1777 336 513 569 0	FY 1999	6		
Performing Organizations Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date Product Development Organizations	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Aerojet (Prime) C/CPFF SBIR/STTR Sunnort and Management Organizations			0	0	1664	1777	0	9052	12493
Project Mgmt Contract Eng Spt C/CPIF Mar 95 Gov't Eng Spt Test and Evaluation Organizations: None Government Furnished Property: To be defined	7		000	000	152 112 98	513 336 569	0 0 0	1241 1266 867	1906 1714 1534
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					1715 362 2077	1777 1418 3195		9052 3374 12426	12544 5154 17698
Project M635		Page	Page 3 of 3 Pages 1413	SS		Ä	Exhibit R-3 (PE 0208053A)	0208053A)	Item 145





EET (R-2 Exhibit) DATE February 1997	PENUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	BUDGET ACTIVITY 7 - Operational System Development 6303

		Name and Address of the Owner, where					A C C C C C C C C C C C C C C C C C C C				
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	3455	3161	9647	3826	7547	7305	9209	9507	9507 Continuing Continuing	Continuing
D491	D491 Communications Security Equipment Technology (COMSEC)	2240	2574	6201	2564	6217	5980	7889	8188	Continuing	8188 Continuing Continuing
D501	D501 Army Key Management System (AKMS)	1215	587	3446	1262	1330	1325	1320	1319	1319 Continuing Continuing	Continuing

AKMS is a part of the management/support infrastructure for the Warfighter Information Network (WIN) program. Additional modifications to the AKMS baseline shall be developed security technology in Army information systems. The Communications Security Equipment Technology (COMSEC) is to insure total signals and data security service/NSA working groups exist in the area of key management to avoid duplication and to assure interoperability between all Services' systems to include standards and of all Army information systems, to include any operational enhancement and specialized Army configurations. The Army Key Management System (AKMS) automates required to support the emerging WIN architecture. System security engineering, integration of available information security (INFOSEC) products, development (when Mission Description and Budget Item Justification: This program develops Information Systems Security (ISS) equipment and techniques required to combat threat key generation and distribution while supporting joint interoperability. It provides communications and network planning with key management on a single platform. testing. For the emerging multilevel network security, the Defense Information Systems Agency (DISA) Multi-Level Security (MLS) working group coordinates the Signal Intelligence capabilities and to insure our data network integrity. The Army's RDTE ISS program objective is to implement National Security Agency (NSA) Services different technology efforts. The National Security Agency reviews each service RDT&E program to avoid duplication between and with their own. These required), and testing are services provided to ensure that C41 systems are protected against malicious or accidental attacks by our enemies or friends. Several joint projects support development of upgrades to current production vehicles and are appropriately funded in Budget Activity 7.

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Exhibit R-2 (PE 0303140A)

		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 7 - Operation	IVITY ationa	вирдет АСТІVITY 7 - Operational System Development	_		PE NI 030	PE NUMBER AND TITLE 0303140A Com Equipment	TITLE Sommuni	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	security	(COMSEC		PROJECT D491
	J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D491 Communics (COMSEC)	nunication SEC)	Communications Security Equipment Technology (COMSEC)	2240	2574	6201	2564	6217	5980	7889	8188	Continuing	Continuing
A. Mission Agency (NS, software or s possible to th accreditation	Descrip A) devel tandard te users.	A. Mission Description and Budget Item Justification: Project D491 - Communications Security Equipment Technology: Project implements National Security Agency (NSA) developed security technology in Army information systems. Project objectives are to provide systems security mechanisms through encryption, trusted software or standard operating procedures to protect the information and to integrate these mechanisms into specified systems so secure operations are as transparent as possible to the users. This entails performing architecture studies and modeling, development models, system integration and testing, installation kits and certifications and accreditations of Automation Information Systems.	tion: Proje ny informati the informat cture studies	ct D491 - Co on systems. ion and to in	ommunicati Project obje ttegrate thes ng, developi	ions Securit ectives are to e mechanism ment models	y Equipmer) provide system inte	nt Technolog stems security fied systems sgration and t	y: Project i y mechanisn so secure op iesting, insta	implements I ns through er erations are illation kits a	National Secr ncryption, tra as transparer and certificat	urity Isted It as ions and
Acquisition FY 97. The	Strateg Produc	Acquisition Strategy: Initial Operational Testing and Evaluation (IOTE) for Tactical End-to-End Encryption Device (TEED) will be done during Task Force XXI in FY 97. The Production Milestone decision will be made after the Joint Warfighter Demonstration in Fall FY 97.	nd Evaluatio made after th	n (IOTE) fo	r Tactical Er fighter Dem	nd-to-End El onstration in	ncryption De Fall FY 97.	vice (TEED)) will be dor	ne during Tas	sk Force XX	.i.
FY 1996 Accomplishments: 1200 Continumanage	complis 1200 506	inments: Continued development of TEED Internet Security Manager, completed critical design review, initiated software coding to perform network management security services of Key Management, Audit, and Access Control Continued development of re-programmable COMSEC/TRANSEC using Couris Module or Digital Signal Processing (DSD) white for embediant	ED Internet s of Key Mar	Security Management, A	nager, compudit, and Ac	sleted critica scess Control	I design revi l ris Module o	ew, initiated	software co	ding to perfe	orm network	tuon t
	534	into speakeasy programmable digital radio. Initiated engineering and manufacturing development (EMD) at Baton TEED - a security device for Internet Protocol (IP) as well as Asynchronous	digital radio	evelopment	(EMD) at B	aton TEED	- a security c	levice for Int	ernet Protoc	ol (IP) as we	ips for cambe	ronous
Total	2240	Iransfer Mode (A I M) networks.	KS.									
FY 1997 Planned Program: • 2574 Deliver civilian	anned P 2574	rogram: Delivery of TEED Internet Security Manager (TISM) for usage with TEED and Integrated System Controller (ISYCON); testing in Army/Joint and civilian test bed begins, testing of reprogrammable COMSEC/TRANSEC in tactical settings. Continues EMD TEED development. EMD TEED will	curity Manag g of reprogra	ger (TISM) f mmable CO	or usage wit MSEC/TRA	th TEED and NSEC in tac	1 Integrated tical setting	System Cont s. Continues	roller (ISYC EMD TEE	ON); testing D developme	g in Army/Jo ent. EMD TI	int and EED will
	i	protect Army computer network users from hackers, deception and other forms of electronic attack on the Internet. Begin "electronic operations" research to investigate techniques to counter electronic terrorism virus and masquerade against Army assets.	rk users fron lues to count	n hackers, de er electronic	sception and terrorism vi	l other forms irus and mas	of electroni querade aga	c attack on thinst Army as	ne Internet. sets.	Begin "elect	ronic operat	ons"





Exhibit R-2 (PE 0303140A)

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2574

Total

Project D491



Heronal System Development much Program: 200 Support NSA TACLANE Program. 940 Evaluation of Commercial INFOSEC & COMPUSEC) equipments, support to Speakeasy Prograder enhanced in the evelopment of common tools set for C2 Protect, and initiate efforts to determine System Vulnerabilical Initiate development of common tools set for C2 Protect, and initiate efforts to determine System Vulnerabilical Initiate development of common tools set for C2 Protect, and initiate efforts to determine System Vulnerabilical Initiate development of common tools set for C2 Protect, and initiate efforts to determine System Vulnerabilical Initiate development of common tools set for C2 Protect, and initiate efforts to determine System Vulnerability of Secure Gateway, wireless LAN, Personal Communication Program: 200 Perform in-house study for Secure Gateway and provide support to TACLANE program. 376 Perform in-house study for Secure Gateway and provide support to TACLANE program. 376 Perform in-house study for Secure Gateway, wireless LAN, Personal Communication Program of Brain and Statistical Secure Gateway, wireless LAN, Personal Communication Program of Brain Brai		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	BET IT	EM JU	STIFIC	SATIO	N SHEE	r (R-2 Exh	ibit)	DATE	February 1997	1997
FY 1998 Planned Program: 940 Evaluation Commercial INFOSEC (COMREC & COMPUSEC) equipments, support to Speakeasy Program, evaluation for commercial INFOSEC (COMREC & COMPUSEC) equipments, support to Speakeasy Program, evaluation to common tools set for C2 Protect, and initiate efforts to determine System Vulnerabilities (Information 6201 FY 1999 Planned Program: 10tal 6201 11 Total 6201 12 Trusted computer platforms and secure applications. 200 Platform in-house evaluations and integrations of INFOSEC equipments such as COMSEC foreign nation releasable chips runsted computer platforms and secure applications. 201 Perform in-house evaluations and integrations of TNFOSEC equipments such as COMSEC foreign nation releasable chips runsted computer platforms and secure applications. 376 Perpare procurement packages for PYO award for the Secure Gateway, wireless LAN, Personal Communications Service evaluation, and installation support acquisition contracts. 9	BUDGET ACTIVITY 7 - Operational	l System Devel	opment				PE NUMBER 0303140 Equipme	AND TITLE A COMMUN	ications Seci	urity (COA	ASEC)	PROJECT D491
For 1 Perform in-house evaluations and integrations of INFOSEC equipments such as COMSEC foreign nation releasable chips traited computer platforms and secure applications. 200 Perform in-house study for Secure Gateway and provide support to TACLANE program. 200 Perform in-house study for Secure Gateway and provide support to TACLANE program. 200 Perform in-house study for Secure Gateway and provide support to TACLANE program. 201 Perform in-house study for Secure Gateway and provide support to TACLANE program. 202 Proper procurement packages for FY00 award for the Secure Gateway, wireless LAN, Personal Communications Service evaluation, and installation support/acquisition contracts. 203 Continue common tool set and Vulnerability determination for C2 Protect (Information Operations/Warfare) Project Change Summary FY 1997 President's Budget Appropriated Value FY 1997 President's Budget Adjustments to Appropriated Value 2321 2515 Adjustments to Appropriated Value 2321 2515 Adjustments to Appropriated Value 240 2564 Change Summary Explanation: Funding: FY 1998 FY 1999 increase to support emphasis on Information Operations/Warfare (FY 98 +5261/FY) C. Other Program Funding Summary: None D. Schedule Profile TEED Prototype Model Testing TEED Prototype Model Delivery X** TEED Prototype Model Delivery X** Thused Metwork Base contract award X** TEED Prototype Model Delivery X** TEED Prototype Model Testing TEED Prototype Model Delivery X** TEED Prototype Model Testing TEED Prototype Model Testing TEED Prototype Model Testing TEED Prototype Model Testing TEED Prototype Model Delivery X** TEED Prototype Model Testing TEED Protot	FY 1998 Planned P 2200 940	rogram: Support NSA TACI Evaluation of Comr for embedding and o	LANE Prog nercial INI developme t of commo	gram. FOSEC (CC nt of new i	OMSEC anstallation for C2 P	& COMPU n kits for rotect, and	JSEC) equipn TACLANE. d initiate effor	ts to determine S	Speakeasy Progras	n, evaluation	of New COMS	EC Chips
FY 1999 Planned Program: Total Perform in-house evaluations and integrations of INFOSEC equipments such as COMSEC foreign nation releasable chips trusted computer platforms and secure applications. Total 200 Perform in-house study for Secure Gateway and provide support to TACLANE program. Perform in-house study for Secure Gateway and provide support to TACLANE program. Total 256 Continue common tool set and Vulnerability determination for C2 Protect (Information Operations/Warfare) B. Project Change Summary FY 1997 President's Budget Adjustments to Appropriated Value FY 1998 Pres Bud Request Change Summary Explanation: Funding: FY 1998/FY 1999 increase to support emphasis on Information Operations/Warfare (FY 98 +5261/FY) C. Other Program Funding Summary: None D. Schedule Profile TEED Prototype Model Testing The FY 1997 Fresident's Budget The FY 1997 Fresident's Budget The FY 1997 Fresident's Budget Adjustments to Appropriated Value FY 1998 Pres Bud Request C. Other Program Funding Summary: None D. Schedule Profile The FY 1997 Fresident's Budget The FY 1997 Fresident's Budget The FY 1997 Fresident's Budget The FY 1998 Fresholds Freshold												
200 Perform in-house study for Secure Gateway and provide support to TACLANE program. 376 Prepare procurement packages for FY00 award for the Secure Gateway, wireless LAN, Personal Communications Service evaluation, and installation support/acquisition contracts. - 1267 Continue common tool set and Vulnerability determination for C2 Protect (Information Operations/Warfare) - 1267 Continue common tool set and Vulnerability determination for C2 Protect (Information Operations/Warfare) - 1267 EY 1996 FY 1997 FY 1998 President's Budget - 2350	FY 1999 Planned Pt 721	rogram: Perform in-house ev trusted computer pla	raluations a	and integral	tions of I	NFOSEC	equipments su	ich as COMSEC	foreign nation rele	asable chips,	high speed enc	ryptors,
FY 1996 EY 1996 2374 940 1297 2321 2515 -81 59 2240 2574 6201 2564 998/FY1999 increase to support emphasis on Information Operations/Warfare (FY 17 19 19 19 19 19 19 19 19 19 19 19 19 19	1 2	Perform in-house str Prepare procuremen evaluation, and insta Continue common to	udy for Sea the packages allation sup ool set and	cure Gatew for FY00 a port/acquis	ay and praward for sition con lity detern	ovide sup the Secur tracts. nination f	port to TACL re Gateway, w or C2 Protect	ANE program. ireless LAN, Per (Information Op	rsonal Communica erations/Warfare)	tions Services	s COMSEC, NI	Ī
23.7	B. Project Change	Summary			FY	9661	FY 1997	FY 1998	FY 1999			
2240 2574 6201 2564 998/FY1999 increase to support emphasis on Information Operations/Warfare (FY) FY 1996 FY 1997 FY 1998 1 2 3 4 1 2 3 5 4 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Appropriated Value Adjustments to Appro	opriated Value			•	2321 -81	2515 2515 59	940	1.59.1			
FY 1996 FY 1997 FY 1998 FY 1997 FY 1998 FX 184 1 2 3 4 1 2 3 4 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	FY 1998 Pres Bud Ro	equest	EV 1000/E	V1000 inc.		2240	2574	6201	2564			
FY 1996 FY 1997 FY 1998 1 2 3 4 1 2 3 4 1 2 3 X* X*	C. Other Program	.pranation. runoing. Eunding Summary: 1	r i 1996/r None	r 1999 mci	ease 10 s	upport em	pnasis on inte	ormation Operati	ons/Warfare (FY 5	8 +5261/FY	99 +1267).	
× × × × × × × × × × × × × × × × × × ×	D. Schedule Profile		-	FY 1996		-	Y 199	-	FY 1998	-	Y 199	
400	TEED Prototype Moc TEED Prototype Moc Trusted Network Base	del Testing del Delivery e contract award	* * *			-		.		1	2	4
rage 3 of 9 rages	Project D491					Page	Page 3 of 9 Pages			Exhibit R-2 (Exhibit R-2 (PE 0303140A)	(

Project Public Project Project	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		M JUST	FICA	ラ と つ 二		エント	KIIIDIL			Feb	February 1997	266
ten review X* X* X* X* X X X X X X X X X X X X X	ырбет астіліту 7 - Operational System Develor	oment			PE N 03C	UMBER AND 3140A uipment	Comm	unicati	ons Sec	urity (C	OMSEC		PROJECT D491
tem review X* X X X X X X X X X X X X X X X X X X	O. Schedule Profile	-	FY 1996	4	- F	7661 Y	7	-	-	-			-
Wate coding	frusted Network Base system review	*×	0		-		+			r	-		+
Near	Frusted Network Base software coding Frusted Network Base system integration			*	,	×							
Coard design X* EC card design X* multimode x	frusted Network Base delivery	,					×						
## Sec card test	Re-Programmable COMSEC award Re-Programmable COMSEC card design	* *											
The string stessing The string	Re-Programmable COMSEC card test	*×											
s testing X	ntegration into multiband, multimode ligital radio VIRTERM installation kits designed				×								
Procurement Procurement Procurement Strip Strip Strip Strip Stribit R-2 (PE 0303140A) Procurement X X X X X X X X X X X X X X X X X X X	AIRTERM installation kits testing												
Procurement X X X X X X X X X X X X X	NFOSEC COTS evaluations	*×			×		×	×	×		×		×
pport and XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	ecure Gateway Study cquisition Planning and Procurement ackages for SEGAT, Wireless LAN,NDI										< ×		× ×
X X X X X X X X X X X X X X X X X X X	valuation, Installation Support and faterial Acquisition Contracts												
X X X Page 4 of 9 Pages Exhibit R-2 (PE 0303140A)	ACLANE Support				×		×	×	×		×		×
Page 4 of 9 Pages	ommon Tool Set							×	×		×		×
Page 4 of 9 Pages	Denotes completed effort												
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	Project D491				Page 4 of	9 Pages				Exhibit R	-2 (PE 03	03140A)	

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RDT&E	&E PROC	PROGRAM ELEMENT	EMENT/PF	/PROJECT	COSTE	REAKD	COST BREAKDOWN (R-3)	3)	DATE F	February 1	1997
BUDGET ACTIVITY 7 - Operational System Development	System Do	evelopmen	ī		PE NUMBER AND 0303140A Equipment		nunicatio	ЭППЕ Communications Security (COMSEC)	(COMSE		РКОЈЕСТ D491
A. Project Cost Breakdown	akdown			FY 1996		FY 1997	FY 1998	FY 1999			
Ancillary Hardware and Software Development	and Software D	evelopment		1146		1389	2862	1168			
System Engineering					. 0	0	1000	0			
Government Engineering Support	ring Support			984	4	1075	2170	1251			
Travel				09	0	09	100	100			
Miscellaneous SBIR/STTR				50	0	50	69	45			
Total				2240	0	2574	6201	2564			
B. Budget Acquisition History and Planning Information:	ion History and	d Planning Inf	ormation:								
Performing Organizations	zations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						•
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Product Development Organizations	nt Organizatio	us									
GTC, Tampa, FL	C-CPFF	AUG 91	8687	8687	113435	0	0	0	0	5500	118935
GTE, Waltham,	C-CPFF	AUG 93	3857	3857	3091	0	800	0	0	20000	23891
MA											
TBD	C-CPFF	JUN 95	2050	2050	996	863	0	1662	1168	cont'd	4659
Rome Labs	MIPR	FEB 95	1525	1525	009	587	0	0	0	0	1187
Alliant Tech Sys.,	C-CPFF	OCT 91	1100	1100	1183	0	0	0	0	cont'd	1183
Eatontown, NJ											
CECOM, RDEC	PO	OCT 95	200	700	0	490	1274	2539	1396	cont'd	5699
NSA	MIPR	MAR 95	200	200	145	300	200	2000	0	0	2945
TEXCOM, Tinton	SS-CPFF	FEB 91	006	006	1200	0	0	0	0	0	1200
Falls, NJ									•)	
Totals						0	0	0	0		
Support and Management Organization: None	ement Organiz	zation: None									
Test and Evaluation Organization: None	Organization:	None									
1070				c				1	!		
Froject D491				Fa	rage 5 of 9 Pages	es		Exhib	it R-3 (PE	Exhibit R-3 (PE 0303140A)	

RDT&E PROGRAM ELEMENT/P	ROJECT COST BREAKDOWN (R-3)	AKDO	WN (R-	(3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	Commu t	nication	s Security	(COMSE		PROJECT D491
Government Furnished Property: N/A	Total Prior to FY 1996 FY	9661	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	120620	2240 2240	2574	6201	2564	25500	159699
Project D491	Page 6 of 9 Pages			Exhi	Exhibit R-3 (PE 0303140A)	0303140A)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	97
BUDGET ACTIVITY 7 - Operation	вирсет Астілітү 7 - Operational System Development	‡		PE N 03(PE NUMBER AND TITLE 0303140A Com Equipment	TITLE Sommun	ications	Security	D ТІТLE Communications Security (COMSEC) t		PROJECT D501
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D501 Army Key	Army Key Management System (AKMS)	1215	587	3446	1262	1330	1325	1320	1319	Continuing	Continuing
A. Mission Des key generation, key managemen	A. Mission Description and Budget Item Justification: Project D501 - Army Key Management System (AKMS): This program provides decentralized and automated key generation, distribution and management while enhancing joint interoperability. It eliminates paper encryption key and provides communications network planning with key management on a single platform.	ation: Projection enhancing joi	ct D501 - A	rmy Key M ability. It el	anagement iminates pap	System (AK ber encryptio	(MS): This on key and pu	program pro	vides decent munications	tralized and a network plan	nutomated nning with
Acquisition Str	Acquisition Strategy: AKMS Initial operational test and Evaluation (IOTE) is scheduled August through September FY97 with IOC in February FY98.	est and Evalua	ution (IOTE)	is schedule	d August thr	ough Septen	nber FY97	with IOC in	February FY	.86.	
FY 1996 Accomplishments:	nplishments:										
•	961 Workstation software developed	ped									
• •	194 Provided contractor and programmatic support 60 Provided TEXCOM support for IOT&E	rammatic sup	port								
Total											
FY 1997 Planned Program:	ed Program:										•
• •	567 Complete software for the AKMS workstation	KMS workstat	ion								
Total	50 Trovide contractor and programmatic support	ammanc supp	110								
FY 1998 Planned Program:	d Program:										
•		ummatic supp	ort, and soft	tware develo	opment upgra	ades for Con	nmon Tier II	I and AKMS	S Workstatio	u	***
Total 34	2504 Develop computer based training for the AKMS Workstation3446	ung for the A	KMS Works	station							
FV 1999 Planned Program:	d Program:										
	337 Provide contractor and programmatic support, and software development upgrades for Common Tier III and AKMS workstation	mmatic suppo	ort, and soft	ware develo	pment upgra	ides for Con	ımon Tier II	I and AKMS	worketation	5	
•	Provide product improvements for Commander in Chief regional controller effort, and future enhancements for new equipment such as ATM	ts for Comma	nder in Chie	fregional co	ontroller effo	ort, and futur	e enhancem	ents for new	equipment s	such as ATM	
Total 12	COMSEC devices										
	70.										
Project D501				Page 7 of 9 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0303140A)	303140A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUST	IIFICAT	ION SH	IEET (R	-2 Exhi	bit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	T.		9E NU 030: Equ	PE NUMBER AND TITLE 0303140A Comi	ть ommuni	PE NUMBER AND TITLE 0303140A Communications Security (COMSEC) Equipment	ecurity	COMSEC		PROJECT D501
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 1273 1259 -44 1215		FY 1997 587 587 587	FY 1998 13669 3446	FY 1999 13599 1262	29 99 			
Change Summary Explanation: Funding: RDT&E funds in FY98	funds in FY98		I FY99 (-10	425) were r	saligned to t	(-9545) and FY99 (-10425) were realigned to the OPA line BA1201.	BA1201.			
C. Other Program Funding Summary OPA Z16800 OPA TA0600 OPA BS9716 OPA BA1201	FY 1996 13705 10758 550	FY 1997 13556 10678 828	FY 1998 0 9976 551 4745	FY 1999 0 12038 359 10425	FY 2000 0 14418 894 1938	FY 2001 0 16366 887 1737	FY 2002 0 18914 1424 2691	FY 2003 0 18325 1744 3531	To Comp cont'd cont'd cont'd cont'd	Total Cost cont'c cont'c cont'c
D. Schedule Profile	FY 1996	4	F. C	FY 1997	1	FY 1998	8 6	-	FY 1999	-
AKMS Decision Brief AKMS Award Competitive Follow-on	*		1)	•	1		•		r
Contract AKMS Computer Software Configuration Item Testing AKMS Initial Operational Test &				×	×					100
Evaluation AKMS Milestone III										
AKMS Material Release AKMS Begin Fielding with Upgraded					× ×	×				
AKMS Initial Operational Capability AKMS Material Release CT3 Upgrade AKMS Material Release Work Station						×		××		
*Wilestone completed										
Project D501			Page 8 of 9 Pages	Pages			Exhibi	Exhibit R-2 (PE 0303140A)	303140A)	
			1701							Itom 146





RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	ST BREAK	DOWN (R-3	DATE	February 1997
вирдет АСТИИТУ 7 - Operational System Development	DE N 03 Eq	PE NUMBER AND TITLE 0303140A Com Equipment	nmunication	Security (COM	PROJECT D501
A. Project Cost Breakdown Software Engineering (Contractor) Government Engineering Support Program Management Support Congressional Adjustments	FY 1996 961 220 12 22	FY 1997 575 10 2 0	EY 1998 946 2400 100	FY 1999 305 907 50	
Total B. Budget Acquisition History and Planning Information: Not Applicable	1215 pplicable	587	3446	1262	
			•		
Project D501	Page 9 of 9 Pages	'9 Pages		Exhibit R-3 (PE 0303140A)	140A)

	RDT&E BUDGET ITEM JUST	EM JUS		TION S	HEET (F	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	26
9008 7 - (вир бет асті vіту 7 - Operational System Development	4		PE NI 030 Grc	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	communi t (SPACE	cations (SATCON	(
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	52821	39421	57827	44288	38779	37760	35886	36149	Continuing	Continuing
D2PT	SMART-T Operational Test	0	137	4715	26	0	0	0	0	0	4878
D2RT	SCAMP Operational Test	260	0	0	0	0	0	0	0	0	260
D253	Defense Satellite Communications Systems- Defense Communications Systems (DSCS-DCS)(Phase II)	17838	16510	14890	11610	8546	7439	11748	12120	Continuing	Continuing
D384	SMART-T	20492	16413	17264	24641	13765	10087	7504	6520	214646	444164
D386	SCAMP Block I	9311	1007	2905	0	0	0	0	0	0	100576
D455	MILSTAR EDM Terminal	282	859	0	0	0	0	0	0	0	299922
D456	Tactical Satellite Communications System	4137	4495	4235	4110	4684	4893	4889	4895	Continuing	Continuing
D559	Automated Communications Management System (ACMS)	0	0	13818	3901	6778	9550	0	0	16328	34047
D561	Military Individual Communicator (MIC)	0	0	0	0	2006	2002	1004	1001	Continuing	Continuing
D562	Multiband Integrated Satellite Terminal (MIST)	0	0	0	0	3000	3789	3782	4651	Continuing	Continuing
D566	Transit MDR (TRAM)	0	0	0	0	0	0	6929	6962	Continuing	Continuing

Mission Description and Budget Item Justification: Military Satellite Communications (MILSATCOM) systems are joint program/project efforts with each Service, Joint Chiefs of Staff (JCS), National Command Authority, Commanders-In-Chief (CINCs), National Security Agency and Office of the Secretary of Defense assigned specific responsibilities as specified in JCS Memorandum of Policy (MOP) 37. The worldwide MILSATCOM systems are the following: Ultra High Frequency (UHF) Fleet Satellite/Air Force Satellite (FLTSAT/AFSAT) system; the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Extremely High

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Exhibit R-2 (PE 0303142A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

INGET ACTIVITY

7 - Operational System Development

PE NUMBER AND TITLE

February 1997

0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)

Agent for MILSATCOM Ground Subsystems. As Executive Agent for MILSATCOM Ground Subsystems, Army is responsible for developing, procuring, and maintaining and other Departments and Agencies of the government. The projects in this Program Element support development acquisition programs or upgrades, still in engineering and manufacturing development (DoDD 5000.1), but which have received approval for production through DAB or other action, or production funds have been included in connectivity to satisfy JCS Command, Control, Communications, and Intelligence (C3I) supporting the President; JCS; CINCs; Military Departments; Department of State; the life cycle logistics support for satellite terminals; satellite control subsystems; communications subsystems; and all related equipment required to achieve end-to-end Frequency (EHF) MILSTAR system; the UHF Follow-On Satellite system; and all MIL-STD-1582C compatible payloads. MOP 37 designates Army as the Executive the DoD budget submission for the budget or subsequent fiscal year, and are, therefore, placed in Budget Activity 7.

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Exhibit R-2 (PE 0303142A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	4		PE NI 03C Grc	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ri⊤∟E iatellite C ironment	communi t (SPACE	cations (SATCON		PROJECT D2PT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2PT SMART-T Operational Test	0	137	4715	26	0	0	0	0	0	4878

an independent test and evaluation of effectiveness and suitability of the system. Project D2PT is restructured from within PE 0303142A, Satellite Communications Ground Environment, and is not a new start. Starting in FY 96 and beyond, funding for operational testing of ACAT I systems is specifically programmed within the PE specific to under conditions as close as possible to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with (OPTEC). SMART-T is an Acquisition Category (ACAT) IC system with an Initial Operational Test and Evaluation (IOTE) in FY 98. Operational testing is conducted conducting operational testing and evaluation of the Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) by the Operational Test and Evaluation Command A. Mission Description and Budget Item Justification: Project D2PT - SMART-T Operational Test. Project D2PT finances the direct costs of planning and each system.

Acquisition Strategy: Not Applicable

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program:

- Planning and preparation for IOT&E 134
- Small Business Innovative Research (SBIR)

Total

FY 1998 Planned Program:

- Conducts IOT&E 4715
 - Total

FY 1999 Planned Program:

Completes OPTEC independent evaluation of IOT&E required to support SMART-T Milestone III Decision Review 26 26

Total

Project D2PT

1425

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Exhibit R-2 (PE 0303142A)



RDT&E BUDGET ITEM JUS	TIFICATIO	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it)	DATE Februs	February 1997
вирсет астилт 7 - Operational System Development		PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ommunicatio (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	PROJECT D2PT
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 0 0 0 0	FY 1997 142 137 137	FY 1998 4708 4715	FY 1999 106 26		
Change Summary Explanation: Funding: FY 99; (-80) Reduction due to streamlining C. Other Program Funding Summary: Not Applicable	ion due to stream	lining				
D. Schedule Profile FY 1996	3 4 1	FY 1997 2 3	4	FY 1998 2 3	FY.1	FY.1999 2 3 4
Initiate IOT&E planning and preparation Conduct IOT&E Independent evaluation to support MS III Decision Review		×		×	×	
Project D2PT	Page	Pace 4 of 33 Paces				
	en ,	1400			-AIIIDIL N-Z (P.E. 0303)	142A)

RDT&E PROGRAM ELEMENT/PR	ROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO	JWN (R-	3)	DATE Fe	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0303142A Satel Ground Environ	AND TITLE A Satelli Environn	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	Satellite Communications (SATCOM)	(SATCOI		PROJECT D2PT
A. Project Cost Breakdown Operational Test and Evaluation SBIR Total	FY 1996	FY	FY 1997 134 3 137	FY 1998 4715 4715	FY 1999 26 26			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Product Development Organizations: Not Applicable Support and Management Organizations: Not Applicable Test and Evaluation Organizations OPTEC SBIR				134	4715	26	0	4875
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				137	4715	26		4878
Project D2PT	Page	Page 5 of 33 Pages	ره		Exhit	Exhibit R-3 (PE 0303142A)	0303142A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	266
вир бет Асті VITY 7 - Operational System Development			PE N 03(PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	Commun t (SPACI	ications E)	Satellite Communications (SATCOM) vironment (SPACE)		PROJECT D2RT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2RT SCAMP Operational Test	260	0	0	0	0	0	0	0	0	260
A. <u>Mission Description and Budget Item Justification</u> : Project D2RT - SCAMP Operational Test: Project D2RT finances the direct costs of planning and conducting testing and evaluation of the Single Channel Anti-Jam Manportable (SCAMP) terminal by the Operational Test and Evaluation Command (OPTEC). SCAMP Block I has been redesignated an Acquisition Category (ACAT) III system requiring Customer Test to evaluate early operational suitability of contractor prototype hardware prior to award of the FY 97 option. OPTEC provides Army leadership with an independent test and evaluation effectiveness and suitability of the system.	ation: Proje ım Manporta III system r / leadership	ct D2RT - Schle (SCAM equiring Cu	SCAMP Opposite the property of	erational Te by the Opera to evaluate e and evaluati	st: Project I tional Test ar arly operation	D2RT finanond Evaluational Evaluational Suitabilional Suitabilionals and Suitabilionals and Suitabilional Evaluational Eva	ces the direct on Commandity of contract	costs of pla I (OPTEC). ctor prototyp e system.	nning and co SCAMP Blo	onducting ock I has orior to
Acquisition Strategy: Not Applicable									·	
FY 1996 Accomplishments: • 260 Evaluated Pre-Award Equipment Demonstrations and Customer Test Total 260	ent Demons	rations and	Customer To	est						
FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: Project not funded in FY 99	66 X									
B. Project Change Summary		FY 1996		FY 1997	FY 1998	FY 1999	66			
FY 1997 President's Budget Appropriated Value		267 269	r 6	0 0	0 0		0 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		260	6- 097	0	0		0			
C. Other Program Funding Summary: Not Applicable	licable									
Project D2RT			Page 6 of 33 Pages	13 Pages			Exhib	Exhibit R-2 (PE 0303142A)	303142A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ET ITE	M JUSTII	FICATI	ON SHEET	-(R-2 E	xhibi	3		DATE	Fahrijary 1997	, 1007	
вирсет Астіvіту 7 - Operational System Development	ment			PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	AND TITLE A Satel Environ	lite Col	mmunica SPACE)	ations (SATCO	M)	PROJECT D2RT	ECT
D. Schedule Profile		Y 199		V 199			FY 1998			Y 199	2	
Evaluate Pre-Award Equipment Demonstrations Conduct Customer Test	- * ×	7	4 *X	2 2	ε 4	-	2	4		2	ω 4	4
*Denotes Milestone Completion												
Project D2RT			Pc	Page 7 of 33 Pages				Exhibit	R-2 (PE	Exhibit R-2 (PE 0303142A)	8	
											,	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT COS	T BREAKD	OWN (R-	3)	DATE Fe	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development	95 NU 030.	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	lite Comm ment (SPA	Σπίτε Satellite Communications (SATCOM) ivironment (SPACE)	(SATCO	M)	PROJECT D2RT
A. Project Cost Breakdown Evaluate Pre-Award Equipment Demonstrations and Conduct	FY 1996 260	FY 1997 0	FY 1998 0	FY 1999 0			
Total	260	0	0	0			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
B. Budget Acquisition History and Planning Information							
Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: Not Applicable	Project Total Office Prior to EAC FY 1996	Total rior to 1996 FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Test and Evaluation Organizations OPTEC 1996		260					260
Government Furnished Property: None			,				
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		260					260
Project D2RT	Page 8 of 33 Pages	Pages		Exhib	Exhibit R-3 (PE 0303142A)	303142A)	

RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA.	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	ıţ		9E NI 030 Gro	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PENUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ommuni (SPACE	cations (:)	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)		PROJECT D253
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D253 Defense Satellite Communications Systems- Defense Communications Systems (DSCS-DCS)(Phase II)	17838	16510	14890	11610	8546	7439	11748	12120	12120 Continuing Continuing	Continuing

Defense Satellite Communications System (DSCS) program. Continuing upgrades for the DSCS are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS provides warfighters multiple channels of tactical connectivity as well as interface with strategic networks and national decision makers. A. Mission Description and Budget Item Justification: Project D253 - DSCS-DCS Phase II: This project provides funds required to develop strategic and tactical Ground Subsystem equipment to support JCS validated Command, Control, Communications and Intelligence (C31) for the worldwide Super High Frequency (SHF)

The DSCS Integrated Management System (DIMS) and Common Network Planning Software (CNPS) programs are software development programs that are not planned to Acquisition Strategy: The Universal Modem System (UMS), Replacement Satellite Configuration Control Element (RSCCE), and Replacement BATSON (RBATSON), programs will be followed by Competitive Firm Fixed Price Procurement Programs that contain a basic production year followed by several option years of production. have follow-on production.

FY 1996 Accomplishments:

- Continued Defense Satellite Communications System (DSCS) Integrated Management Systems (DIMS) Interface Software (Phase I) Completed Universal Modem (UM) development and continue Medium Data Rate (MDR) Technical Insertion UM Program 2050
- Continued Non-Developmental Item (NDI) Adaptation Phase of Replacement Satellite Configuration Control Element (RSCCE) 4203
 - Developed the Specification and Acquisition Requirements Package for RBATSON
 - Completed DSCS Training Device development. 393
- Continued support and upgrades to the Integrated Research Facility (IRF) and Systems Engineering Technical Support (SETA) efforts 2328
 - 400

7838

FY 1997 Planned Program:

- Complete MDR Technical Insertion UM Program 2871
- Continue DIMS Interface Software (Phase II) 2513
- Complete the NDI Adaptation Phase for the RSCCE
 - Initiate development of the Replacement BATSON 4587

Project D253



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Exhibit R-2 (PE 0303142A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATIO	N SHEET	(R-2 Exhi	bit)		DATE Feb	February 1997	2
вирсет Астилту 7 - Operational	зирдет Астіvіт∀ 7 - Operational System Development		PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	Sommunic t (SPACE)	cations	(SATCOM)		PROJECT D253
FY 1997 Planned P 1945 415 2020 Total 16510	 FY 1997 Planned Program: (continued) 1945 Initiate development of the Integrated Baseband Workstation (IBWS) 415 Develop the specification and acquisition requirements package for the Common Network 2020 Continue IRF and SETA efforts 390 Small Business Innovation Research / Small Business Technology Transfer (SBIR/STTR) Total 16510 	nd Workstatic uirements pacl 3usiness Tech	on (IBWS) kage for the Co nology Transfe	seband Workstation (IBWS) requirements package for the Common Network Planning Software (CNPS) all Business Technology Transfer (SBIR/STTR)	Planning Soft	ware (CNP	S)		
FY 1998 Planned Program:	ogram: Continue DIMS Interface Software (Phase III) Continue the RBATSON program Complete the IBWS program Initiate the Common Network Planning Software (CNPS) program Continue IRF and SETA efforts) are (CNPS) p	rogram						
FY 1999 Planned Program: 1000 Comple 2000 Comple 5940 Continu 2670 Continu	ogram: Complete the RBATSON program Complete the DIMS Interface Software program Continue the CNPS program Continue IRF and SETA efforts	ш							
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	Summary Budget opriated Value	FY 1996 18290 18474 -636	FY 1997 17063 16510	FY 1998 15226	FY 1999 11946	6 5			588 1200 <u></u>
FY 1998 Pres Bud Request	rednest	17838	16510	14890	11610	0			
C. Other Program Funding Summary OPA 2 - SSN: BB8500	nding Summary FY 1996 74311	FY 1997 FY 97406	EY 1998 FY 1999 87643 101727	99 FY 2000 27 70826	FY 2001 71375	FY 2002 59901	FY 2003 58396	To Compl Cont.	Total Cost Cont.
Project D253		Page	Page 10 of 33 Pages	5		Exhibit	Exhibit R-2 (PE 0303142A))3142A)	

RDT&E BUDGET ITEM	JUSTIFICATIO	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1997
вирдет астіvітү 7 - Operational System Development		PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	unications (SATCO	PROJECT D253
D. Schedule Profile 1 DSCS Trainer H/W & S/W Integration X* Test UM Tech/International Test RSCCE Testing including Init Oper Test Award R-BATSON Contract DIMS Interface SW Testing (Phase I) IBWS System Specification Completion DIMS Interface SW Testing (Phase II) CNPS Contract Award RBATSON Testing DIMS Interface SW Testing (Phase III)	EY 1996 2 3 4 X*	FY 1997 1 2 3 4 1 2 X* X* X X X X X X X X X X	FY 1998 2 3 4 1 X X	FY 1999 2 3 4 X X
* Denotes milestone completion Project D253		Page 11 of 23 Dags		
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RDT&E PROGRAM ELEMENT/PRO	JECT CO	PROJECT COST BREAKDOWN (R-3)	DOWN (R-3	DATE	February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE N	PE NUMBER AND TITLE 0303142A Satel	Ellite Commu	0303142A Satellite Communications (SATCOM)	PROJECT D253
	้อ	Ground Environment (SPACE)	nment (SPA)	SE)	
A. Project Cost Breakdown	FY 1996	FY 1997	FY 1998	FY 1999	
Development (Prototype, Sys Engr, 1est & Evaluation)	12223	10674	10500	7800	
Integrated Research Facility	200	825	800	770	
Contractor Engineering Support	1032	1050	621	570	
Government Engineering Support	2255	1939	1505	1200	
Program Management Support	1628	1632	1464	1270	
SBIR/STTR	0	390	0	0	
Total	17838	16510	14890	11610	

B. Budget Acquisition History and Planning Information: Not Applicable

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Project D253

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Exhibit R-3 (PE 0303142A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	. 26
BUDGET ACTIVITY 7 - Operational System Development	Į,		PE N 03(Gr	PE NUMBER AND TITLE 0303142A Satel Ground Environ	TITLE Satellite (rironmen	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ications :)	(SATCON		РRОЈЕСТ D384
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost

A. Mission Description and Budget Item Justification: Project D384 - SMART-T. The Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) will provide a permit uninterrupted communications as our advancing forces move beyond the line-of-sight capability of MSE. This equipment will communicate at both low and medium data rates (LDR/MDR) over the MILSTAR satellite constellation. It will also be compatible with the UHF Follow-On (UFO); the Navy Fleetsatcom EHF satellite package; stated above. The SMART-T will also have Low Probability of Interception and Low Probability of Detection (LPI/LPD) to avoid being targeted for destruction, jamming range extension capability for the Army's Mobile Subscriber Equipment (MSE) to support the Force Projection Army. Specifically, it will provide a satellite interface to and MIL-STD-1582B/C compatible payloads. It will provide the security, mobility, and anti-jam capability required to defeat the threat and satisfy the critical need as or intercept. The prime mover will be a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) configured with all the electronics and the self-erectable antenna.

444164

214646

6520

7504

10087

13765

24641

17264

6413

20492

D384 SMART-T

Decision will be conducted prior to exercising the first FRP Option in FY 99. The total Army terminal requirement is 209, of which 43 will be procured during LRIP (base year plus one option) to ensure sufficient quantities are available for the launch of the first MDR satellite in FY 99. The full scale production (FSP) quantities (157 Army Acquisition Strategy: The SMART-T program employed a competitive development strategy. The development phase included two contractors performing under Costproposals. The Project Management Office elected to defer discrete development initiatives until after down select for greater cost efficiency. A SMART-T Milestone III included a reliability growth plan to achieve the required reliability by Follow-On Test and Evaluation (FOT&E). Both Low Rate Initial Production (LRIP) and Full Rate terminals) will be awarded as fixed price options to the LRIP/FSP contract following Milestone III approval. Additional quantities (i.e., 178) will be procured for the Air Plus-Incentive-Fee (CPIF) contracts. The contracts were awarded on 9 Nov 92 to Raytheon Company (Marlborough, MA) and Rockwell International (Richardson, TX). Twelve Engineering Development Model (EDM) terminals (6 from each contractor) were developed under the two contracts. The streamlining features of this phase Production (FRP) were competitively awarded to Raytheon Company on 7 Feb 96 under a single contract based upon the development contract effort and LRIP/FSP Force, Marine Corps, JCSE, Navy, and other DoD Special Users.

FY 1996 Accomplishments:

- Completed Contractor Technical Test and obtain Low Rate Initial Production (LRIP) Decision 13574
- Began development effort for Joint Interoperability Standard, Automated Communications Management System, Network Control, and Demand Assigned Multiple Access 6198

 - Began development of interactive training courseware 720

Project D384

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Exhibit R-2 (PE 0303142A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	R-2 Exhib		DATE February 1997	1997
BUDGET ACTIVITY 7 - Operationa	вирдет Астіуіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	SATCOM)	PROJECT D384
FY 1997 Planned Program:	rogram: Continue development of Network Control, Demand Assigned Multiple Access, Payload Specification Changes and C4I Technical Architecture Continue development of interactive training courseware Conduct Terminal Test with Lincoln Labs MDR Simulator Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	sssigned Multiple Acc re ator cchnology Transfer (S	ess, Payload Spe BIR/STTR)	cification Changes and	C4I Technical Archi	ecture
FY 1998 Planned Program:	rogram: Continue development of Network Control, Demand Assigned Multiple Access, Payload Specification and C4I Technical Architecture Complete development of interactive training courseware Initiate Polar modification development work	ssigned Multiple Acce ire	ss, Payload Spec	iffication and C4I Techn	nical Architecture	
FY 1999 Planned Program:	rogram: Continue development of Network Control, C4I Technical Architecture and Demand Assigned Multiple Access Continue Payload Specification Change development work resulting from test with on-orbit MDR Payload satellite Complete Polar modification development work	cal Architecture and ork resulting from tes	Demand Assigne t with on-orbit M	d Multiple Access IDR Payload satellite		
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	E Summary S Budget 21226 Order Order 21440 21440 Propriated Value 20492	EY 1997 17217 16413	FY 1998 23764 17264	FY 1999 95 24641		
Change Summary Explanation: Funding: FY 98: (-650 FY 99: (+24546) repre	30) reprogrammed to establish ogrammed from OPA to fund I	Communications Man odification, Payload S	agement System	for Automated Communications Management Systems (ACMS) program line (D559)	e (D559) I Architecture	
Project D384		Page 14 of 33 Pages		Exhibit	Exhibit R-2 (PE 0303142A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	LIFICA	TION SH	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
вирсет Астииту 7 - Operational System Development			PE NUI 0303 Gro	PE NUMBER AND TITLE 0303142A Satel Ground Environ	пле atellite C ironment	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ations (SATCOM		PROJECT D384
C. Other Program Funding Summary Other Procurement Army 2 - SSN: BC 4002 Other Procurement Army 4 - SSN: BS 9720	FY 1996 51429	FY 1997 34670 0	FY 1998 22762 1042	FY 1999 61019 1454	FY 2000 65957 0	FY 2001 44791 2919	FY 2002 16268 2656	FY 2003 11160 2053	To Compl Cont Cont	Total Cost Cont
D. Schedule Profile 1 Complete Contract Technical Test	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3	3 8	1 2	FY 1999 2 3	4
spi	* * * *		·	. ×		×	×	×		
Project D384			Page 15 of 33 Pages	3 Pages			я С	Eyhihit R.2 (DE 0303442A)	3347.26)	
			1437				TOTAL	17-2 11 - 00		Item 147



RD	RDT&E PROGRAM ELEMENT	SRAM EL		COJECT	COSTE	REAKD	PROJECT COST BREAKDOWN (R-3)	(5)	DATE	February 1997	766
вирсет астииту 7 - Operational System Development	ıl System D	evelopme	nt		PE NUMBE 030314 Groun	PE NUMBER AND TITLE 0303142A Satell Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	s (SATCO		PROJECT D384
A. Project Cost Breakdown Contractor Government Systems Engineering & Project Mgmt SBIR/STTR Total	<u>3reakdown</u> ms Engineering	& Project Mg	mt	FY 1996 13286 7206 20492		FY 1997 9508 6510 395 16413	FY 1998 12157 5107 17264	EY 1999 18557 6084 24641			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Vehicle EA	tion History and izations Contract Method/Type or Funding	d Planning In Award or Obligation	Iformation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations Dual Development C-CPIF Contracts	ent Organizatio C-CPIF	09 Nov 92	11713	11713	108786	8387	0	0	0	0	117173
Other Contracts MIPR/PWD Vario Govt Support N/A Vario Support and Management Organizations	MIPR/PWD N/A	Various Various	63797 23625	63797 23625	349	4899	9620 2526	121 <i>57</i> 2137	18557 2084	14891	60473
Other Contracts Core Support Lab Activities Lincoln Labs SBIR/STTR	MIPR/PWD N/A MIPR/PWD MIPR N/A	Various Various Various N/A	15475 6227 10057 3049	15475 6227 10057 3049	10260 3094 2428 20160	630 678 838 1800	361 317 652 2542 395	685 300 1300 685	700 300 1800 1200	8685 17370 43425 121590	21321 22059 50443 147977 395
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle Product Development Property CDH Chips/Chip MIPR	shed Property Contract Method/Type or Funding Vehicle ant Property MIPR	Award or Obligation <u>Date</u> Jul 93	Delivery <u>Date</u>		Total Prior to FY 1996 149	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Project D384				Pag	Page 16 of 33 Pages	ges		Exhi	Exhibit R-3 (PE 0303142A)	0303142A)	,

	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST B	REAKDO	OWN (R-	3)	DATE	February 1997	266
Total Prior to FY 1996 FY 1996 FY 1996 14766 16346 15146 150708 20492 16413 1	вирдет астилту 7 - Operational System Development	0303142 Ground	AND TITLE 2A Satell Environn	ite Comm	unications (CE)	(SATCO	(E)	PROJECT D384
150708 20492 16413	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior to <u>FY 1996</u> 114766 35942	FY 1996 16546 3946	FY 1997 12146 4267	FY 1998 14294 2970	FY 1999 20641 4000	Budget to Complete 23576 191070	Total <u>Program</u> 201969 242195
	Total Project	150708	20492	16413	17264	24641	214646	444164
				·				
Project D384 Project D384 E5		18e 17 of 33 Pag	sə		Exhi	Exhibit R-3 (PE 0303142A)	0303142A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development	ŧ		93 PE N	PENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	TITLE Satellite C ironmen	communi t (SPACE	cations (SATCOIN		PROJECT D386
			7,7000	Total Control Total Control Total Control Total Control Total Control	0000 //	7000 71	2000	2000	of too	Total Cont

COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	998 FY 1999 late Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D386 SCAMP Block I	9311	1007	2905	0	0	0	0	0	0	100576

is the first EHF manportable terminal and provides direct support to the tactical warfighter mobile forces with greater anti-jam protection, lower probability of intercept, and smoke, aerosol, rain, fog, snow, haze and dust, and must operate in the transmit, receive or stand-by mode throughout an entire mission (typically 30 days). SCAMP BLK I (SHF) band. It will provide Low Data Rate (LDR) secure voice at 2400 bps and secure data at 75-2400 bps, as well as interface with Common Hardware/Software devices data, half duplex voice communications at 2400 bits per second (bps) each in a 37 pound manportable configuration. These satellite terminals are to be employed by units SCAMP BLK I will operate on all satellites which utilize the MIL-STD-1582C/D LDR waveform. It will be required to operate in environmental conditions that include such as the Lightweight Computer Units and the Hand-Held Terminal Unit. The SCAMP BLK I will be fully interoperable within the Army C4I Technical Architecture. A. Mission Description and Budget Item Justification: Project D386 - SCAMP. The SCAMP BLK I Terminal will provide four simultaneous channel full duplex intelligence, command, and control traffic from a base station. It will transmit in the Extremely High Frequency (EHF) band and receive in the Super High Frequency that require range extension for command and control communications. Block I will provide priority tactical ground users with the capability to transmit and receive The terminal will have embedded COMSEC and TRANSEC with set-up and tear-down in less than 10 minutes. In addition to operation on MILSTAR satellites, the lower probability of detection.

26 Oct 94, the AAE restructured the SCAMP Block I program and the Martin Marietta Corporation contract was Terminated for Convenience. A Milestone III Decision for a competitive full scale production buy (quantity of 312 multi-service terminals) was approved on 15 Nov 94. An Advanced Planning Briefing to industry was held at Fort was made to Terminate for Convenience the Lockheed Corporation contract on 16 Sep 93. A Market Survey was conducted in Jun 94 in which 5 vendors participated. On Firm Fixed Price Production Contract to Rockwell International, Richardson, Texas, on 23 Feb 96. Engineering Feasibility Efforts (EFE) to develop the objective terminal Monmouth, New Jersey, on 29 Nov 94. On 7 Apr 95, the SCAMP Block I was redesignated an ACAT III program. Team Fort Monmouth awarded the SCAMP Block I approach and lead to Milestone II/III Engineering/Manufacturing Development (EMD) Phase for the objective system. The SCAMP Block II effort previously funded in competitively awarded in Sep 92. Based upon unexpected cost growth of both contractors and the lack of government affordability to retain two, an early determination in the range of 12-15 pounds was approved in the Acquisition Decision Memorandum to begin in FY 96 through FY 99. These efforts provide confidence in technical Acquisition Strategy: The Block I development phase initially included two competing contractors performing under Cost-Plus-Incentive-Fee (CPIF) which were this PE is restructured to PE 0603856A, Project D389 beginning in FY 97.

FY 1996 Accomplishments:

- 3825 Completed Pre/Post Award Evaluation/Demonstrations/Reviews/Customer Test/MILSTAR Spec change
- Began Engineering Feasibility Efforts (EFE) (i.e., lightweight composite structures, paging prototype system, enhanced vocoder, etc.)

Total 9311

Project D386

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Exhibit R-2 (PE 0303142A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFIC,	ATION SHE	ET (R	-2 Exhi	bit)		DATE Feb	February 1997	766
вирбет Астиіту 7 - Operational System Development		PE NUM 0303 Grou	PE NUMBER AND TITLE 0303142A Satel Ground Environ	ा⊤∟E atellite C ironment	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ations (SATCOM		PROJECT D386
FY 1997 Planned Program: 748 Conduct System level tests 237 Initiate/complete UHF Follow-On (UFO), Fleetsat EHF Package (FEP) Control Planning Tools 22 Small Business Innovation Research/Small Business Technology Transfers (SBIR/STTR) Total 1007	On (UFO), Flectsat E earch/Small Business	lectsat EHF Package (FEP) Control Planning Business Technology Transfers (SBIR/STTR)	P) Control nsfers (SB)	Planning Tc IR/STTR)	ols				
FY 1998 Planned Program: • 2905 Initiate/Complete Polar Modification development Total 2905	ation development								
FY 1999 Planned Program: Programs not funded									
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FX 1996 9549 9645 -334	FY	19 <u>97</u> 1029 1007	FY 1998 6056	FY 1999 0				
FY 1998 Pres Bud Request	6		1007	2905	0				
Change Summary Explanation: FY98: (-3151) Zero reprogrammed to support Automated Communications Management System (ACMS) D559.	eprogrammed to sup	port Automated	Communic	ations Mana	igement Systei	n (ACMS) D559.		
C. Other Program Funding Summary Other Procurement Army 2 - SSN: BC 4003 Other Procurement Army 3 - SSN: BS 9718	FY 1996 FY 1997 20057 14425	FY 1998 4305 2571	FY 1999 4813 2853	FY 2000 1763	FY 2001 F	FY 2002 494	FY 2003 241	To Compl Cont Cont	Total Cost Cont Cont
D. Schedule Profile 1 Begin Engineering Feasibility Efforts X*	FY 1996 2 3 4	FY 1997	3	4	FY 1998 2 3	4	1 2	FY 1999 2 3	4
**	*X								
Project D386		Page 19 of 33 Pages	Pages			Exhibit	Exhibit R-2 (PE 0303142A)	03142A)	
		1441							Item 147





Virtual System Development	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997	797
1 2 3 4 1 2 3 4 1 2 3 3 4 1 2 3 3 3 3 3 3 3 3 3	BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communi Ground Environment (SPACE		PROJECT D386
raluation X* X* X* X* X* X X X X X X	F <u>Y 1996</u>	FY 1997	FY 199	
	valuation Valuation (UFO)/ P) utions	2 × ××	4 × ×	4
Page 20 of 33 Pages	Project D386	Page 20 of 33 Pages	Exhibit R-2 (PE 0303142A)	

RD	RDT&E PROGRAM ELEMENT/PROJECT	RAM EL	EMENT/PR		COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	997
BUDGET ACTIVITY 7 - Operational System Development	ւl System De	velopmen	ţ		PE NUMBER AND TITLE 0303142A Sate Ground Environ	RAND TITLE 2A Satell Environt	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	SATCO		РРОЈЕСТ D386
A. Project Cost Breakdown Contractor Government Systems Engineering and Project Management SBIR/STTR Total	reakdown ns Engineering an	ıd Project Man	agement	FY 1996 4067 5244 9311		FY 1997 609 376 22 1007	FY 1998 2806 99 2905	FY 1999 0 0			
B. Budget Acquisition History and Planning Information	tion History and	Planning Inf	ormation								
Performing Organizations Contractor or	izations Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation Date	Activity	Office	Prior to	EV 1006	EV 1007	EV 1000	EV 1000	Budget to	Total
Product Development Organizations**	ent Organization	Daic ns**	757	747	1 1 1 2 2 0	1 1 1 2 2 0	1221	1 1 1 1 2 2 0	F I 1999	Complete	riogiam
Martin Marietta	CPIF	Sep 92	38998	38998	386688	0	0	0	0	0	386688
Lockheed	CPIF	Sep 92	9650	9650	9650	0	0	0	0	0	9650
Other Contracts	PWD	Various	N/A	19232	11750	4067	609	2806	0	0	19232
Govt Support	MIPR/PWD	Various	N/A	7902	6628	1199	0	75	0	0	7902
Support and Management Organizations:	gement Organiz	zations:									
Other Contracts	MIPR/PWD	Various	N/A	8177	6673	1128	376	0	0	0	8177
Core Support	N/A	Various	N/A	3830	2916	890	0	24	0	0	3830
Lincoln Labs	MIPR	Various	N/A	12352	10385	1961	0	0	0	0	12352
Lab Activities	MIPR/PWD	Various	N/A	353	353	0	0	0	0	0	353
SBIR/STTR							22				22
Test and Evaluation Organizations	on Organizations	:2.									
EMP Test	MIPR	Sep 96			0	09		0	0	0	09
(Kirkland AFB)											
** Lockheed Terminated for Convenience 9/93	nated for Conven	ience 9/93									
** Martin Marietta Terminated for Convenience 10/94	Terminated for C	onvenience 10,	/94								
Government Furnished Property: Not Applicable	ished Property:	Not Applicable	6								
Project D386				Page	Page 21 of 33 Pages	ses		Exhi	Exhibit R-3 (PE 0303142A)	0303142A)	
											1.4.4.7







Pie Number And Title Gard 4.24 Satellite Communications (SATCON Ground Environment (SPACE)	RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	KDOWN (R.	-3)	DATE Fe	February 1997	760
Total Prior to EV 1996 EV 1996 EV 1997 EV 1997 ort and Management 67026 5266 609 288 ort and Management 720327 4045 398 ; and Evaluation 87353 9311 1007 299 Page 22 of 33 Pages	BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TI 0303142A Se Ground Envir	माह atellite Comm ronment (SP/	nunications ACE)	S (SATCOF		PROJECT D386
87353 9311 1007 290 Bage 22 of 33 Pages	Subtotal Product Development Subtotal Support and Management	至	FY.1	FY 1998 2881 24	FY 1999	Budget to Complete	Total Program 75782 24794
Page 22 of 33 Pages	Total Project			2905			100576
Page 22 of 33 Pages							
	Project D386	Page 22 of 33 Pages		Exh	bit R-3 (PE (0303142A)	

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Project Notive Project	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (F	8-2 Exhi	bit)		DATE	2	200
ACEDM Tenninal ACEDM TENNINAL	E	ıt		930 Gre	UMBER AND 13142A S	TITLE Satellite C	communit (SPACE	cations :)	SATCON	uary -	PROJECT
Pescription and Budget Item Justification: Project D455 - MILSTAR EDM Terminal (MET). These EHF MILSTAR Engineering Development Moonals will be utilized as test assets to support satellife payload tests. They will also reduce risk in the Secure Mobile Anti-Jam Reliable Tactical Terminal and Single Channel Anti-Jam Mapportable (SCAMP) terminal development process. The terminals are capable of providing mobile, survivable, anti-jam, and Single Channel Anti-Jam Reliable Tactical Terminal and Single Channel Anti-Jam Reliable Tactical Terminal and Single Channel Anti-Jam Reliable Tactical Terminal and Single Channel Anti-Jam Mapportable (SCAMP) terminal development (FSCAMP) terminal development (FSCAMP) terminal development of the Channel Anti-Jam Mapportable (SCAMP) terminal development (FSCAMP) and SMART-T contractor risk reduction tests and satellite payload tests. 783 Continued Government and Contractor support of testing with SCAMP and SMART-T to reduce risk set of the changed world situation, no program. Program: Program Not Funded FEY 1996 FOR	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
A. Mission Description and Budged Hem Justification: Project D455 - MiLSTAR EDM Terminal (MET). These EHF MILSTAR Engineering Development Model (EDM) terminal and Budged Hem Justification: Project D455 - MiLSTAR EDM Terminal (MET). These EHF MILSTAR Engineering Development (ESMAP) terminal probability-of-intercept communications from an S-250 shelter mounted on a Common Utility Cargo Vehicle (CUCV) truck towing a trailer with generator. Acquisition Strategy: A single Full Scale Engineering Development (FSED) contract was awarded in Mar 85 to develop and produce 15 FSED terminals. Magnavox Electronic Systems Company received the award. A sole source production contract was to be executed in Nov 92; however, due to the changed world situation, no Production buy was required. The MET will be used for SCAMP and SMART-T contractor risk reduction tests and satellite payload tests. FY 1996 Accomplishments: SS9 Continued Government and Contractor support of testing with SCAMP and SMART-T to reduce risk FY 1997 Planned Program: SS9 Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk FY 1999 Planned Program: Program Not Funded FY 1999 Planned Program: Program Not Funded FY 1999 Planned Program: Program Not Funded FY 1999 Planned Program: Studied FY 1999 Planned Program: Studied FY 1998 Pers Bud Request FY 1		783	859	0	0		0	0	0	0	
Acquisition. Strategy: A single Full Scale Engineering Development (FSED) contract was awarded in Mar 85 to develop and produce 15 FSED terminals. Magnavox Electronic Systems Company received the award. A sole source production contract was to be executed in Nov 92; however, due to the changed world situation, no production buy was required. The MET will be used for SCAMP and SMART-T contractor risk reduction betas. FY 1996 Accomplishments: 1 otal 783 Continued Government and Contractor support of testing with SCAMP and SMART-T to reduce risk FY 1997 Planned Program: • 839 Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk Total 859 Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk FY 1998 Planned Program: Program Not Funded FY 1999 Planned Program: Program Not Funded FY 1998 Planned Program: Program Not Funded FY 1998 Planned Program: Summary FY 1998 Planned Program: Summary FY 1998 Planned Program: Program Not Punded Adjustments to Appropriated Value Adjustments to Appropriated Value FY 1998 Press Bud Request Typical Summary: Not Applicable C. Other Program Funding Summary: Not Applicable Project DASS FY 1995 Planned Program Funding Summary: Not Applicable	A. Mission Description and Budget Item Justific (EDM) terminals will be utilized as test assets to sup/(SMART-T) and Single Channel Anti-Jam Manpor probability-of-intercept communications from an S-	ation: Proje pport satellite rtable (SCAM	ct D455 - M payload test P) terminal counted on a	ILSTAR E s. They wil developmen Common U	DM Termir Il also reduce It process. T Itility Cargo	nal (MET). re risk in the She terminals	These EHF Niecure Mobil are capable CV) truck to	AILSTAR E le Anti-Jam of providing	ngineering I Reliable Tac mobile, sur er with gener	Developmen stical Termin vivable, ant rator.	t Model nal i-jam, low
romplishments: 783 Continued Government and Contractor support of testing with SCAMP and SMART-T to reduce risk 783 nned Program: 859 Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk 859 nned Program: Program Not Funded nned Program: Program Not Funded Change Summary Sident's Budget 793 878 679 789 878 679 783 859 64 Value 58 Bud Request 783 859 659 66 Sammary: Sident's Manding Summary: S	Acquisition Strategy: A single Full Scale Enginee Electronic Systems Company received the award. A production buy was required. The MET will be use	ering Develop A sole source ed for SCAMI	ment (FSEL production of and SMAR	ontract was contract was T-T contract	vas awarded s to be execu ctor risk redu	in Mar 85 to ted in Nov 9 action tests an	develop and 2; however, nd satellite p	I produce 15 due to the cl ayload tests	FSED terminanded FSED t	inals. Magr d situation,	по
859 Continue Government and Contractor support of testing with SCAMP and SMART-T to reduce risk 859 nned Program: Program Not Funded nned Program: Program Not Funded Change Summary Sident's Budget 6 Value 793 859 10 859 10 859 10 859 10 859 10 859 10 859 10 859 10 859 10 859	FY 1996 Accomplishments: • 783 Continued Government and C Total	Contractor sup	port of testi	ng with SC/	AMP and SM	1ART-T to re	duce risk				
nned Program: Program Not Funded FY 1996 FY 1997 FY 1998 FY 1999 Change Summary FY 1996 FY 1997 FY 1998 FY 1999 Ssident's Budget 7793 878 0 0 d Value 793 859 -10 ss Bud Request 783 859 FY 1998 pgram Funding Summary: Not Applicable Page 23 of 33 Pages	FY 1997 Planned Program: • 859 Continue Government and Cc Total 859	onfractor supp	ort of testing	g with SCAI	MP and SM	ART-T to rec	luce risk				
Change Summary FY 1996 FY 1997 FY 1998 FY 1999 Change Summary 789 878 0 0 ssident's Budget 793 879 0 0 d Value 793 859 10 0 ss Bud Request 783 859 859 859 ogram Funding Summary: Not Applicable Page 23 of 33 Pages 859 859	FY 1998 Planned Program: Program Not Funded										
Change Summary FY 1996 FY 1997 FY 1998 FY 1999 ssident's Budget 789 878 0 0 d Value 793 859 0 0 st to Appropriated Value 783 859 859 ss Bud Request 783 859 859 Page 23 of 33 Pages	FY 1999 Planned Program: Program Not Funded	_									
ogram Funding Summary: Not Applicable Page 23 of 33 Pages	B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1990 797 797 787		878 859 859	FY 1998 0	FY 199	6J 0			
rage 23 of 33 rages	C. Other Program Funding Summary: Not App	licable		2 66				i			
	CC+CI malari			rage 23 of	33 Pages			Exhibi	R-2 (PE 03	303142A)	





RDT&E BUDGET ITEM.	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE Fahrusey 1007
BUDGET ACTIVITY 7 - Operational System Development	PENUMBER AND TITLE O303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCOM) D455
D. Schedule Profile 1 2 SMART-T Low Data Rate (LDR) X* Verification Evaluation Demo with SCAMP Follow-On Test and Evaluation (FOT&E) with SCAMP *Denotes milestone completion	EY 1996 EY 1997 EY 1998 2 3 4 1 2 3 4 1 2 3 4	FY 1999
Project D455	Page 24 of 33 Pages 1446 UNCLASSIFIED	Exhibit R-2 (PE 0303142A) Item 147

RDT	&E PROG	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT	OJECT	COSTB	REAKD	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	1997
вироет Астипү 7 - Operational System Development	System De	velopment			PE NUMBER 030314 Ground	PE NUMBER AND TITLE 0303142A Satell Ground Environr	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCO	IM)	РРОЈЕСТ D455
A. Project Cost Breakdown Government Systems Engineering and Project Management Total	<mark>eakdowin</mark> s Engineering a	nd Project Maı	ıagement	FY 1996 783 783		FY 1997 859 859	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	on History and	Planning Info	rmation								
Performing Organizations	ations										
Contractor or	Contract										
Government	Method/Type		Performing	Project	Total						
Pertorming	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Froduct Development Organizations	ent Organizatio	Suc									
Magnavox (D501)	FFP	Dec 85	112544	112544	112544						112544
Raytheon (D500)	T&M	Sep 90	11303	11363	11303						11363
Magnavox (B754)	T&M	Apr 92	1126	1126	1126						933
Govt Support					31153	421	299				31873
Lab Activities					4256						4256
Lincoln Labs					18949						18949
Support and Management Organizations	gement Organiz	zations									
Other Contracts					16192	202	456				16850
SS/MSP JMPO					4373						4373
Crosslink					,						
Statistical					3396						3336
MIIKE					1613	,					1613
Core Support					67397	160	104				19929
Test and Evaluation Organizations	1 Organizations	⊘ I									
Test Support					24966						24966
Government Furnished Property: Not applicable	ed Property: N	lot applicable									
Project D455				Page	Page 25 of 33 Pages	ses		Exhit	Exhibit R-3 (PE 0303142A)	0303142A)	



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT COST BREAKDO	JWN (R-3)	DATE F (February 1997	
вирвет Астіvітү 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ns (SATCO		PROJECT D455
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 180324 421 92971 362 24966 298261 783	FY 1997 299 560 859	FY 1999	Budget to Complete	Total Program 181044 93893 24966 299903
Project D455	Page 26 of 33 Pages	Ë	Exhibit R-3 (PE 0303142A)	303142A)	
	0777				1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (F	R-2 Exhi	bit)		DATE FeI	February 1997	766
BUDGET ACTIVITY 7 - Operational	BUDGET ACTIVITY 7 - Operational System Development			9E NU 030 Gro	PE NUMBER AND TITLE 0303142A Sate Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	communi t (SPACE	cations (PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)		PROJECT D456
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D456 Tactical Satellite	Tactical Satellite Communications System	4137	4495	4235	4110	4684	4893	4889	4895	Continuing	Continuing
A. Mission Descript Communications (GN Department of Defen: Intelligence (C31) req	A. Mission Description and Budget Item Justification: Project D456 - Tactical Satellite Communications (TACSATCOM). The Ground Mobile Forces Satellite Communications (GMFSC) for TACSATCOM system provides funds for the development of tactical satellite communications terminals and control systems for the Department of Defense. Developments under this program provide rapid, reliable, effective communications to support tactical Command, Control, Communications and Intelligence (C31) requirements for tactical commanders and Commanders-in-Chief (CINC).	tion: Project provides for object of the provides for object of the provides for the provid	t D456 - Ta unds for the le rapid, rel manders-in	actical Satel developmer iable, effecti -Chief (CIN	llite Communt of tactical ive commun(v).	nications (7 satellite com	FACSATCO munications pport tactics	M). The G s terminals a al Command	round Mobil nd control sy , Control, Co	le Forces Sat ystems for th ommunicatio	ellite ie ons and
Acquisition Strategrefforts for Demand A engineering efforts as SATCOM-on-the-Mc	Acquisition Strategy: Multiple engineering and development efforts associated with acquisition of satellite communications terminals and control systems. Development efforts for Demand Assigned Multiple Access (DAMA) waveform improvement and addition of GPS and Havequick capabilities will be accomplished via government engineering efforts and implemented via Engineering Change Proposal (ECP) on the current Enhanced Manpack UHF Terminal Spitfire, Fixed-Price Production Contract. SATCOM-on-the-Move analysis, acquisition and test efforts are also accomplished under this program.	velopment el (A) wavefori g Change Prost efforts are	forts associan improvem posal (ECP also accomp	ated with accient and add on the curriles.	quisition of sition of GPS ent Enhance	satellite comi and Havequed Manpack l m.	munications iick capabili UHF Termir	terminals an ties will be a ial Spitfire,	id control sysiccomplished Fixed-Price	stems. Deve I via governi Production	lopment nent Contract.
FY 1996 Accomplishments:	 hments: Completed P3I on PSC-5 Spitfire for OTAR Analysis and voice recognition Continued Spitfire 5 KHz DAMA Waveform Improvement Initiate and complete specification development for Super High Frequency (SHF) Tri-Band Advanced Range Extension Terminal (STAR-T) Initiated development of SATCOM-on-the-Move Initiatives Task Force XXI 	fire for OTA. MA Wavefo ttion develop COM-on-the	R Analysis arm Improve ment for Su Move Initia	nd voice rec ment per High Fre ttives	cognition equency (SH	F) Tri-Band	Advanced F	kange Extens	sion Termina	- e	
FY 1997 Planned Program:	ogram: Continue Spitfire 5KHz DAMA Waveform Improvement Complete government and contractor support of STAR-T Continue developments and conduct field tests for SATCOM-on-the-Move initiatives (formerly SCATS) Battlefield Digitization integration efforts Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs	A Waveform ntractor supp onduct field t ttion efforts search/Small	Improveme ort of STA ests for SAT Business Te	ent R-T CCOM-on-th	e-Move init ransfer (SBI	Improvement ort of STAR-T ssts for SATCOM-on-the-Move initiatives (formerly SC Business Technology Transfer (SBIR/STTR) programs	erly SCATS				

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Exhibit R-2 (PE 0303142A)



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Project D456



RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JU	STIFICAL	TION SH	IEET (R.	-2 Exhib	it)		DATE Fe	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	em Developme	ıt		9E NU 030.	PE NUMBER AND TITLE 0303142A Satel Ground Environ	ENUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ommuni (SPACE	cations (SATCON		PROJECT D456
FY 1998 Planned Program:	ogram: Continue Spitfire DAMA Waveform Improvement Incorporate GPS and Havequick capabilities in Spitfire terminals Continue various SATCOM on the Move analysis, acquisition, and test efforts Battlefield Digitization integration efforts	aveform Imp uick capabilli on the Move gration effort	rovement ies in Spitfire analysis, acqu s	terminals uisition, and	test efforts						
FY 1999 Planned Program:	ogram: Complete Spitfire DAMA Waveform Improvement Complete GPS and Havequick Spitfire efforts Continue various SATCOM on the Move analysis, acquisition, and test efforts. Continue Battlefield Digitization architecture efforts	Vaveform Imp ck Spitfire ef on the Move ition architec	orovement forts analysis, acqu ture efforts	uisition, and	test efforts.					·	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1008 Pres Rud Request	ary ; d Value		EY 1996 4244 4287 -150	FY	FY 1997 4348 4495	FY 1998 4313	FY 1999 4180	81 O			
r i 1990 ries bud Request			413		4493	4233	4	0			
C. Other Program Funding Summary Other Procurement Army 2; SSN: K77200 Other Procurement Army 2, SSN: BB8417 Other Procurement Army 2, SSN BA9350	g Summary SSN: K77200 SSN: BB8417 SSN BA9350	FY 1996 16952 9535	EY 1997 18609 5437 9123	FY 1998 7264 2021 14328	FY 1999 1840 2035 31206	FY 2000 0 349 34295	FY 2001 0 349 70894	FY 2002 0 349 83065	EY 2003 0 351 51445	Compl Cont Cont Cont	Total Cost Cont Cont
D. Schedule Profile	. 1	FY 1996 2 3	3 4	1 2	FY 1997 2 3	4 1	FY 1998 2 3	3 4		FY 1999 2 3	4
Complete Specification development for STAR-T		*	1								
SATCOM-on-the-Move Award/Field Test Project D456	ard/Field Test		**	X Page 28 of 33 Pages	X 13 Pages			Exhibit	Exhibit R-2 (PE 0303142A)	303142A)	

RDT&E BUDGET ITEM JUS	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	
вирбет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	ions (SATCOM) D456	лест 56
<u>V</u>	FY 1997	V 199	
Complete EMUT Voice Recognition Conduct 5KHz Waveform demonstration Complete 5KHz Waveform Improvement Initiate GPS/Havequick integration Complete GPS/Havequick testing	3 4 1 2 3 4 1 2 3 X* X* X X X X X X X X X X X X X X X X	4 1 2 3 4 × × × ×	4
* Denotes milestone completion			
			41.1.11-11-1-1
Project D456	Page 29 of 33 Pages	Exhibit R-2 (PE 0303142A)	
	1451		Item 147

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAK	DOWN (R-3)	DATE	February 1997
вирдет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	ations (SATC	PROJECT D456
A. Project Cost BreakdownFY 1996Development Support Equipment Acquisition2242Contractor Engineering Support400Government Engineering Support916Program Management Support579SBIR/STTR10tal	96 FY 1997 42 2295 30 554 16 794 79 748 104 37 4495	FY 1998 2190 685 760 600	FY 1999 2273 640 585 612 4110	
B. Budget Acquisition History and Planning Information: Not Applicable				

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Project D456

Exhibit R-3 (PE 0303142A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (F	2-2 Exhi	bit)		DATE Fe	February 1997	397
BUDGET ACTIVITY 7 - Operational System Development	ıţ		9E N 030 Gro	PE NUMBER AND TITLE 0303142A Satel Ground Environ	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	communi t (SPACE	cations :)	SATCON		РRОЈЕСТ D559
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D559 Automated Communications Management System (ACMS)	0	0	13818	3901	6778	9550	0	0	16328	34047
A. Mission Description and Budget Item Justification: Project D559 - ACMS: The Air Force funded the ACMS since FY93. All Services (USAF, Army, and Navy) are funding for their unique software and hardware requirements. ACMS is critical to the dynamic and efficient operation of battlefield command and control networks using Air Force developed MILSTAR satellites and Army developed MILSTAR terminals. ACMS enables Army users to take advantage of advanced features of the MILSTAR system, to include directly tasking the satellite constellation, repointing payload antennas, and rapidly changing network configurations. ACMS is not a new start. The Army initiated participation in FY96 under project D384. Funding was realigned from OPA budget lines and established RDTE Project D559. The ACMS must be integrated into ISYSCON to make it available to the tactical user and to coordinate MILSTAR range extension of MILSTAR networks.	cation: Projection: requirements Army develute constended are little constender project D3 the tactical of	ct D559 - A ACMS is pped MILS7 llation, repo 84. Fundir ser and to c	CMS: The critical to the AR termina inting paylo ig was realig oordinate M	Air Force fiedynamic and se dynamic and se ACMS er and antennas, gned from OillESTAR ran	t D559 - ACMS: The Air Force funded the ACMS since FY93. All Services (USAF, Army, and Navy) ACMS is critical to the dynamic and efficient operation of battlefield command and control networks led MILSTAR terminals. ACMS enables Army users to take advantage of advanced features of the ation, repointing payload antennas, and rapidly changing network configurations. ACMS is not a new 4. Funding was realigned from OPA budget lines and established RDTE Project D559. The ACMS must and to coordinate MILSTAR range extension of MILSTAR networks.	MS since F peration of users to take changing ne nes and estal	Y93. All Se battlefield costadors advantage twork confibilished RDT R networks	rvices (USA ommand and of advanced gurations. A E Project D:	AF, Army, and Navad control networks defeatures of the ACMS is not a new D559. The ACMS n	d Navy) works the a new CMS must
Acquisition Strategy: ACMS is not a new start. Development efforts were initiated in FY96 under D384 and D386. Development funds were zero summed to establish this new line in FY98. ACMS is a Joint Service MILSTAR community initiative which is an integral part of the MILSATCOM Architecture. The overall development effort is being managed by the Joint Program Office. Input and interaction with the terminal offices is required to ensure a comprehensive system solution is achieved. Development work will begin in FY97 and will continue through FY01, as ACMS is phased in and tested incrementally.	Development ILSTAR com e. Input and ntinue througl	offorts were munity initii nteraction v FY01, as A	initiated in Jative which just the term	FY96 under is an integral inal offices is sed in and te	D384 and D. I part of the P. s required to	386. Develo MILSATCO ensure a coentally.	pment fund M Architect mprehensiv	s were zero s ure. The ow e system solu	summed to e erall develo ation is achi	stablish oment sved.
FY 1996 Accomplishments: Efforts funded in project D384 PE 0303142A	ject D384 PE	0303142A								
FY 1997 Planned Program: Efforts funded in project D384 PE 0303142A	oject D384 PE	0303142A								
 FY 1998 Planned Program: 12748 Begins integration, test and fielding of incremental builds 650 Participates in MILSTAR Intersegment Test (MST6000) 420 Participates in Joint Technical Reviews, Management Reviews, Technical Interchange Meetings, and Technical Demonstrations Total 13818 	ielding of inc tersegment Te al Reviews, M	emental build: st (MST6000) anagement Re	lds 0) Reviews, Te	chnical Inter	change Mee	tings, and Te	schnical Der	nonstrations		
 FY 1999 Planned Program: 2881 Continues integration, test and fielding of incremental builds 600 Participates in MILSTAR Intersegment Test (MST8000) 420 Participates in Joint Technical Reviews, Management Reviews, Technical Interchange Meetings, and Technical Demonstrations Total 3901 	id fielding of tersegment Te al Reviews, M	ncremental st (MST800 anagement	builds 0) Reviews, Te	chnical Inter	change Mee	tings, and Te	chnical Der	nonstrations		
Project D559		Ç	Page 31 of 33 Pages	33 Pages			Exhib	Exhibit R-2 (PE 0303142A)	303142A)	

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RDT&E BUDGET ITEM JUS	STIFICATION SHEET (R-2 Exhibit)	ION SH	EET (R	-2 Exhi	oit)		DATE	February 1997	97
вирдет Астіvіту 7 - Operational System Development		PE NUN 0303 Grou	PE NUMBER AND TITLE 0303142A Satel Ground Environ	atellite C Ironment	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	cations (БТІТЕ Satellite Communications (SATCOM) ivironment (SPACE)		PROJECT D559
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 0 0 0 0	FY 1997 0	7 <u>66</u> 0 0	FY 1998 0 13818	FY 1999 0 3901	99 0 11			
Change Summary Explanation:Funding: FY 1998: (+13818) Realigned from BC4002/BC4003 to establish new line for ACMS developmentFY 1999: (+3901) Realigned from BC4002/BC4003 to continue ACMS development	/BC4003 to es BC4003 to con	tablish new	line for AC 3 developm	MS develop	ment				
C. Other Program Funding Summary FY 1996 Other Procurement Army 2 - SSN: BC4130	FY 1997 0	FY 1998 0	FY 1999 0	FY 2000	$\frac{\text{FY } 2001}{0}$	FY 2002 3840	$\frac{\text{FY } 2003}{0}$	To Compl Cont	Total Cost Cont
D. Schedule Profile 1 2 3 Participate in MST8000 Participate in MST8000	4	FY 2	FY 1997 2 3	4 - ×	FY 1998 2 3	8 E	T C	FY 1999 2 3 X	4
Project D559	Pc	Page 32 of 33 Pages	Pages			Exhibit	Exhibit R-2 (PE 0303142A)	1	

RDT&E PROGRAM ELEMENT/PRO	ROJECT COST BREAKDOWN (R-3)	OST BRI	EAKDC	WN (R-	3)	DATE Fe	February 1997	397
BUDGET ACTIVITY 7 - Operational System Development	<u>a</u> • •	PE NUMBER AND TITLE 0303142A Satel Ground Environ	ND TITLE Satelli nvironn	PE NUMBER AND TITLE 0303142A Satellite Communic Ground Environment (SPACE)	PE NUMBER AND TITLE 0303142A Satellite Communications (SATCOM) Ground Environment (SPACE)	(SATCOI		РКОЈЕСТ D559
A. Project Cost Breakdown Product Development Support and Management Total	FY 1996 0	FY 1997	0 0	FY 1998 9662 4156 13818	FY 1999 2732 1169 3901			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC E	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Other Contracts TBD TBD N/A Govt Support MIPR/PWD TBD	23823	0 0	0 0	00	9662 1662	2732 467	11429	23823
Support and Management Organizations Other Contracts MIPR/PWD Core Support N/A Test and Evaluation Organizations: None		0	0 0	0	1109	312	1306	2727 3409
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation					11324 2494	3199	13388 2940	27911
Total Project					13818	3901	16328	34047
Project D559	Page 3.	Page 33 of 33 Pages			Exhik	Exhibit R-3 (PE 0303142A))303142A)	

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RDT&E BUDGET ITEM JUS	TEM JUS	STIFICA	TION S	HEET (R	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	797
BUDGET ACTIVITY 7 - Operational System Development	ıţ		PE N 03(PE NUMBER AND TITLE 0303150A Army System (AGCCS)	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	bal Comr	nand and	d Control		PROJECT DC86
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC86 Army Global Command and Control System	0	19389	15045	14793	9526	4715	4937	2461	12176	83042

of the Joint Global Command and Control System (GCCS). This support is being accomplished through the Army's Global Command and Control System (AGCCS) which is currently under development and is therefore appropriately included in Budget Activity 7. This is not a new start. Prior to FY 97, funding for this program was provided component of the GCCS. This project involves the development, enhancement and integration of software functionality that currently exists within the Army's inventory or A. Mission Description and Budget Item Justification: Project DC86 - AGCCS: This project is the Army component system that directly supports the implementation identified the Standard Theater Army Command and Control System (STACCS) as the foundation for the Army Global Command and Control System (AGCCS). Using is a selection of the Army's best of breed command and control functionality. The AGCCS-developed software systems will dramatically improve the Army's ability to STACCS foundation applications and additional software functionality developed under the Army World Wide Military Command and Control System (WWMCCS) analyze courses of action; develop and manage Army forces supporting joint war plans; and ensure that the Army portions of war plans are feasible. The Army has Information System (AWIS) and the AGCCS will provide a layered architecture and functional best-of-breed software applications to develop a totally integrated under Program Element 0203740A, Project DC49, Standard Theater Army Command and Control System.

Firm-Fixed-Price) contract was awarded to Lockheed Martin Corporation (LMC) in December 1994. The contract consists of software development, software maintenance integration of selected STACCS, TACCIMS, and CSSCS mission support applications/software into the CP1 baseline. Deliveries 1 through 4 are scheduled to be delivered the IPT were instituted providing the users of AGCCS, five mission support software deliveries identified as Capability Package 1 (CP1), and Deliveries 1 through 4. CP1, Acquisition Strategy: The AGCCS software integration and development effort is a 5 year incrementally funded completion effort. A hybrid (Cost-Plus-Award Fee and and relocation/de-installation of the test facility upon completion of the contract. Based on the priority of achieving WWMMCS shutoff and replacing the system with the GCCS interface to selected HQDA, and FORSCOM sites. Deliveries 1 through 4, which will be delivered throughout the remainder of the LMC contract, will provide the PM STCCS established an Integrated Process Team (IPT) to review the status of the remaining software integration and development functional deliveries. The results of to eleven Army sites located throughout the world. A common hardware platform will be used within the Army to implement AGCCS/GCCS. This will include products which was delivered in 2QFY96 and designated IOC in 4QFY96, provided the replacement for the AWIS strategic mission support applications/software and the Army's GCCS/AGCCS, the remaining software integration and development effort that was originally scheduled as Capability Packages 1 through 10 deliveries was restructured. from the Army's Common Hardware/Software-2 (CHS-2) contract which consists of Commercial Off The Shelf (COTS) software packages. The COTS hardware and software will provide machines with expanded processing, storage and communications capability as well as office-automation and management software.

FY 1996 Accomplishments: Project not funded in FY 96

Project DC86

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Exhibit R-2 (PE 0303150A)

	RDT&E BUDGET ITEM JUSTIFICATI	FIFICATION SHEET (R-2 Exhibit)	R-2 Exhibit)	DATE February 1997	у 1997
вирдет Астіvітy 7 - Operationa	вирсет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0303150A Army System (AGCCS)	D TITLE Army Global (GCCS)	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	PROJECT DC86
FY 1997 Planned Program: • 1636 Perform	Program: Perform Systems Engineering Continue Prime Mission Software Develonment				
644	Perform Data Engineering Conduct Systems Test and Evaluation				
• 2000 • 474 Total 10389	Perform Program Support and Management Efforts Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR)	ınical Transfer (SBI	R/STTR)		
FY 1998 Planned Program:	Program: Darform Cuetame Engineering				
11587					
400	Perform Data Engineering Conduct Systems Test and Evaluation				
• 1600 Total 15045					
EV 1000 Planned Program.	Pour om .				
2516	Perform Systems Engineering				
101//					
• 550 • 1300 Total 14793	Conduct Systems Test and Evaluation Perform Program Support and Management Efforts				
B. Project Change Summary FY 1997 President's Budget	Summary FY 1996 s Budget 0	FY 1997 19804	FY 1998 15088	FY 1999 14808	
Appropriated Value Adjustments to Appropriated Value	ropriated Value	19389			
FY 1998 Pres Bud Request	reduest 0	19389	15045	14793	
Project DC86	I	Page 2 of 5 Pages		Exhibit R-2 (PE 0303150A)	0A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	A JUSTIFICA	HS NOIT	EET (R	-2 Exhil	oit)		DATE Feb	February 1997	26
BUDGET ACTIVITY 7 - Operational System Development		PE NUN 0303 Syst	PE NUMBER AND TITLE 0303150A Army System (AGCCS)	TILE rmy Glok SCS)	D TITLE Army Global Command and Control GCCS)	nand and	Control		PROJECT DC86
C. Other Program Funding Summary Procurement OPA-2 BA8250 Army Global Cmd & Cont Sys (AGCCS)	FY 1997 20437	FY 1998 17315	FY 1999 23772	FY 2000 13638	FY 2001 9025	FY 2002 6699	FY 2003 6728	To Compl 82200	Total Cost 179814
1 plete	FY 1996 2 3 4	FY 1 2	FY 1997 2 · 3 X	4	FY 1998 2	8 8 3 4	1 2	FY 1999 2 3	4
AGCCS Delivery 2 Start AGCCS Delivery 3 Start AGCCS Delivery 4 Start AGCCS Delivery 2 Complete		×		×	×	×			
AGCCS Delivery 3 Complete AGCCS Delivery 4 Complete							×		×
Project DC86		Page 3 of 5 Pages	Pages			Exhibit	Exhibit R-2 (PE 0303150A)	3150A)	
		1458							Item 148

RDT&E PR(RDT&E PROGRAM ELEMENT/PROJECT	EMENT/PR		OST BE	REAKDO	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	160
BUDGET ACTIVITY 7 - Operational System Development	Development	J.		PE NUMBER AND TITLE 0303150A Arm) System (AGCCS	PE NUMBER AND TITLE 0303150A Army (System (AGCCS)	Global Co	PE NUMBER AND TITLE 0303150A Army Global Command and Control System (AGCCS)	nd Contro		PROJECT DC86
A. Project Cost Breakdown Systems Engineering Prime Mission - Software Development Data Engineering System Test and Evaluation Support and Management SBIR/STTR Total	opment		FY 1996	FY 1997 1636 11651 644 2984 2000 474 19389	7 1997 1636 11651 644 2984 2000 474 19389	FY 1998 708 11587 400 750 1600	FY 1999 2516 10177 250 550 1300			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing Activity or Funding Obligation Activity	and Planning Into	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations LMC HYBRID COE Support MIPR TBD TBD	ations DEC 94 TBD	TBD	TBD	000	0 0 0	12359 300 0	8,063	7,997	2,500 2000 6960	30919 3050 6960
Support and Management Organizations PM STCCS Test and Evaluation Organizations CECOM - IV&V MIPR EPG-Test Spt MIPR	ganizations tions			0 0	0 0	4786 770 400	5032 750 400	5646 550 350	15355 2500 1900	30819 4570 3050
SBIR/S11R Project DC86			Page	Page 4 of 5 Pages	5	1	Exh	Exhibit R-3 (PE 0303150A)	0303150A)	
				1459						Item 148



RDT&E PROGRAM ELEMENT/	AM ELEMENT/PRO	PROJECT COST B	COST BREAKDOWN (R-3)	WN (R-		DATE	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development	opment	PE NUMBER ANI 0303150A System (A	PE NUMBER AND TITLE 0303150A Army (System (AGCCS)	D TITLE Army Global Command and Control GCCS)	mmand a	nd Contro	-0	PROJECT DC86
Government Furnished Property Contract Method/Type Award Item or Funding Obligat Description Vehicle Date Product Development Property LMC - GFE MIPR Support and Management Property: None	Award or Obligation Delivery <u>Date</u> None	Total Prior to FY 1996 0	FY 1996	FY 1997 300	FY 1998 300	FY 1999	Budget to Complete 2600	Total <u>Program</u> 3200
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				12959 4786 1644 19389	8863 5032 1150 15045	8247 5646 900 14793	14060 15355 4400 33815	44129 30819 8094 83042
Project DC86		Page 5 of 5 Pages	S.		Exhi	Exhibit R-3 (PE 0303150A)	0303150A)	
		1460 UNCLASSIFIED	۵					Item 148

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SH	HEET (R	k-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operational System Development			9E NU 030 Sys	PE NUMBER AND TITLE 0305114A Joint System (JPALS)	TITLE Ioint Prec ALS)	PE NUMBER AND TITLE 0305114A Joint Precision Approach Landing System (JPALS)	proach	Landing		PROJECT D711
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D711 Joint Precision Approach Landing System (JPALS)	0	0	750	0	0	0	0	0	0	750
A. Mission Description and Budget Item Justification: The Joint Precision Approach Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operation missions operating from fixed base, ship, tactical and austere environments. The effort will develop methodology to incorporate JPALS into aircraft while considering aircraft environment, electrical power, system space, weight, antenna placement and electromagnetic compatibility without nullifying low observable capability requirements. The project in this Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is, therefore, correctly placed in Budget Activity 7.	ation: The J to conventio LS into aircr v observable sittion strateg	oint Precisic nal and spec aft while cor capability re	nt Precision Approach Landing System (JPALS) is a pr ll and special operation missions operating from fixed by t while considering aircraft environment, electrical powe apability requirements. The project in this Program Eler and is, therefore, correctly placed in Budget Activity 7.	Landing Sy missions of craft enviror The projec	vstem (JPAL perating fron ment, electr t in this Prog in Budget Ac	S) is a precion fixed base, ical power, sgram Elemer ctivity 7.	sion approad ship, tactic system space it supports r	ch and landin al and auster e, weight, ant esearch effor	g system pr e environme tenna placer ts in the eng	oviding ants. The nent and gineering
Acquisition Strategy: The acquisition strategy is support the joint research and development project leading to production of a joint system.	upport the jo	int research	and develop	ment project	t leading to p	production of	f a joint syst	lem.		
FY 1996 Accomplishments: Project not funded in FY 96	FY 96									
FY 1997 Planned Program: Project not funded in FY 97	FY 97									

FY 1999 Planned Program: Project not funded in FY 99

FY 1998 Planned Program:

• 750 Support JPALS research and development efforts.

Total 750

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	0	0	0	0
Appropriated Value	0	0		
Adjustments to Appropriated Value				
FY 1998 Pres Bud Request	0	0	750	0

Change Summary Explanation: Funding - FY98 (+750) to establish a new program for Joint Precision Approach & Landing System.

Project D711

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Exhibit R-2 (PE 0305114A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1997
вирсет астіvітү 7 - Operational System Development	PE NUMBER AND TITLE 0305114A Joint Precision Approach Landing System (JPALS)	PROJECT D711
C. Other Program Funding Summary: Not applicable		
1996	FY 1998	6661 2
Support JPALS efforts	1 2 3 4 1 2 3 4 1 2 X	5
Project D711	Page 2 of 3 Pages Exhibit R-2 (PE 0305114A)	15114A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ENT/PRO	JECT (SOST B	REAKDO	OWN (R-	3)	DATE	Fobrusey 1997	1007
вирсет Астіvіту 7 - Operational System Development			PE NUMBER AND TITLE 0305114A Joint System (JPALS)	0305114A Joint System (JPALS)	DE NUMBER AND TITLE 0305114A Joint Precision Approach Landing System (JPALS)	Approac	h Landing	enidaly	PROJECT D711
A. Project Cost Breakdown Engineering Development Total		FY 1996	FY	FY 1997	FY 1998 750 750	FY 1999	6		
B. Budget Acquisition History and Planning Information:	tion:								
d or Pe ation me	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Support and Ivanagement Organizations Gov't Agencies MIPR Test and Evaluation Organizations: None	750	750				750			750
Government Furnished Property: None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation						750			750
Total Project						750			750
Project D711		Page	Page 3 of 3 Pages	s		Exh	Exhibit R-3 (PE 0305114A)	0305114A)	
			1463						Itom 140

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 7 - Operational System Development	ţ		PE N(PE NUMBER AND TITLE 0305128A Secu	PE NUMBER AND TITLE 0305128A Security and Intelligence Activities	ind Intell	igence A	ctivities	-	Р ROJECT H12
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
H12 Intelligence Support to Force XXI	0	477	500	955	946	937	953	696	0	5737

A. Mission Description and Budget Item Justification: This program element provides funds the Proof of Concepts to define fundamental capabilities and limitations of Artificial Intelligence), networks which link tactical and high speed wide area capabilities [utilizing Asynchronous Transfer Mode (ATM), Syncrous Optical Net (SONET), Intelligence XXI technologies which supports Force XXI. This requires a comprehensive understanding of the following seven critical technologies when integrated into Automatic Target Recognition (ATR) and Assisted Target Recognition (AITR) for timeline reductions. This project supports development of new operational concepts and multi-level security capabilities] throughout all echelons, sensors for real-time information of the battlefield throughout the electromagnetic spectrum, the Dynamic Visualization Databases for live or synthetic environment (including terrain, features, texture, images, weather, environment, entities and units as a minimum), and the live, virtual or constructive environments. These critical technology areas include: displays (public, cockpit and heads-up), computer hardware capable of high speed analytical and graphical processing, computer software for distributed tactical or simulation environments (including tools such as Knowledge Based Reasoning and efforts in the intelligence arena and therefore is appropriately funded in Budget Activity 7.

Acquisition Strategy: Utilize existing INSCOM, Joint Precision Strike Demonstration and Advanced Research Project Agency contracts to obtain hardware and software integration support. Major integrated Proofs of Concepts, with the 525th Military Intelligence Brigade as the user, will occur on a quarterly basis. Major milestones in FY97 are XVIII ABC exercises (November 1996, May 1997 and September 1997) and Troop Force XXI AWE (Feb 1997).

FY 1996 Planned Program: Project not funded in FY 1996

FY 1997 Planned Program:

- Continue Proofs of Concepts with quarterly integration tests
- Small Business Innovation Research/Small Business Technology Transfer Program (SBIR/STTR)

Total

FY 1998 Planned Program:

- Expand Proof of Concepts vertically to divisions with quarterly integration tests
- 500 Total

FY 1999 Planned Program:

Transition technology horizontally to corps/divisions continuing Proofs of Concept test with quarterly integration tests 955

955

Total

Project H12

Exhibit R-2 (PE 0305128A)

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RDT&E BUDGET ITEM JUSTI	FICATIO	IIFICATION SHEET (R-2 Exhibit)	R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0305128A Secu	D TITLE Security an	D305128A Security and Intelligence Activities	Activities	PROJECT H12
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	EY 1996 0 0	FY 1997 487 477 477	FY 1998 485 0 500	FY 1999 939 0 955		

Change Summary Explanation: Project decremented (-10) for undistributed congressional reductions.

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Proofs of Concept/Integration of prototypes for distributed control and visualization of intelligence information over commercial ATM and tactical networks will be initiated. This capability will enable two dimensional and three dimensional visualization of intelligence data for collaborative situational awareness.

FY 1998 FY 1997 FY 1996

Proofs of Concepts

* Denotes completed effort.

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Project H12

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Exhibit R-2 (PE 0305128A)





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST BR	EAKDOWN (R		DATE February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305128A Secu	PE NUMBER AND TITLE 0305128A Security and Intelligence Activities	ntelligence Act	PROJECT IVITIES H12
A. Project Cost Breakdown	FY 1996 FY 1997	97 FY 1998	FY 1999	
Primary Hardware Development		90 93	352	
Software Development		185 195	390	
Developmental/Operational Test	1	140 147	147	
Integrated Logistics Support		50 65	99	
SBIR/STTR		12		
Total	4	477 500	955	

B. Budget Acquisition History and Planning Information: Not Applicable

Project H12

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Exhibit R-3 (PE 0305128A)

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RDT&E BUDGET ITEM JUS	ITEM JUS		TION SH	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	160
BUDGET ACTIVITY 7 - Operational System Development	ent		PE NI 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	TITLE Multiple L provemer	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy m	stem		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	68851	62804	26678	21845	24041	29424	30077	21673	Continuing	Continuing
D027 Improved Launcher Mechanical System	20269	26350	14607	0	0	0	0	0	0	64195
D050 Improved Fire Control System	34865	25773	0	0	0	0	0	0	0	140330
D054 Extended Range Rocket	13717	10681	0	0	0	0	0	0	0	85080
D093 Army Technical Architecture	0	0	863	2617	2235	1823	8943	6962	Continuing	Continuing
D783 Smart Tactical Rocket	0	0	0	0	0	0	10134	14711	Continuing	Continuing
D784 Guided Multiple Launch Rocket System	0	0	11208	19228	21806	27601	11000	0	0	90843

Rocket (ER-MLRS), Improved Fire Control System (IFCS), Improved Launcher Mechanical System (ILMS), Guided MLRS Rocket (GMLRS), enhanced Army Technical Architecture (ATA), and MLRS Smart Tactical Rocket (MSTAR). The ER-MLRS project will enhance the capability of the existing MLRS by providing improvements in Multiple Launch Rocket System (MLRS). This Product Improvement Program (PIP) provides for the Engineering and Manufacturing Development of an Extended Range the number of launchers required per mission, thus dramatically reducing the logistics burden. The ATA will integrate M270A1 launcher with dual protocol capability and submunitions that will detect, classify, and engage stationary or moving armored and other high valued targets. These projects support development of upgrades to current MLRS by providing greater range and significantly enhanced accuracy. The improvement in accuracy will reduce the number of rockets required to defeat targets, reduce responsiveness, improve survivability, and enhance effectiveness in countering surface-to-surface missile fire. The GMLRS will greatly enhance the capability of the ERgrowth capabilities for existing and future MLRS Family of Munitions (MFOM) weapon systems. The ILMS, by decreasing the stow to aim point timeline, will increase Mission Description and Budget Item Justification: Expanding Regional Power Threats require an evolutionary improvement program to maintain the effects of the component obsolescence in the existing design. This effort will result in reduced operation and support costs due to addition of built-in test equipment and will provide range, accuracy, effectiveness, and maneuver force safety (self-destruct fuze). The IFCS corrects present and future supportability problems resulting from electronic implement Force XXI Situational Awareness and ATA display standards to M270A1 launchers & trainers. The MSTAR will be a guided MLRS rocket carrying smart production vehicles and are appropriately funded in Budget Activity 7.

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Exhibit R-2 (PE 0603778A)

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	RDT&E BUDGET ITEM JU		TIFICA	TION SI	HEET (F	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 7 - Operationa	вирсет астіvity 7 - Operational System Development	ıt		PE N 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	aunch F	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program			PROJECT D027
J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D027 Improved Laun	Improved Launcher Mechanical System	20269	26350	14607	0	0	0	0	0	0	64195
A. Mission Description and I and Manufacturing Developme and increase MLRS platform someovement of the Launcher Lost rockets will be reduced from 2000 the firing point and reload area will be designated as M270A1.	A. <u>Mission Description and Budget Item Justification</u> . Project D027 - Improved Launcher Mechanical System (ILMS): This project provides for the Engineering and Manufacturing Development (EMD) of the ILMS will decrease the stow-to-aim point timeline, enhance effectiveness in engaging and supporting the force, and increase MLRS platform survivability. The ILMS will replace selected components of the MLRS M270 launcher mechanical drive system. The time required for movement of the Launcher Loader Module from the stowed position to first rocket away will be reduced from 93 seconds. Reload operations for twelve rockets will be reduced from 260 seconds to 160 seconds. These improvements will allow faster engagement of short dwell time targets and increase crew survivability on the firing point and reload area. Reduced operation and support costs are expected with the design. When combined with the Improved Fire Control System, the launcher will be designated as M270A1.	ation Projects The ILM MS will replate stowed positionals. These and support	ect D027 - I S will decre ce selected tion to first improveme costs are ext	mproved Li aase the stow components rocket away nts will allo	auncher Me -to-aim poir of the MLR; will be redu w faster eng	chanical Sy tt timeline, e S M270 laun teed from 93 agement of s	stem (ILM: Inhance effe- Icher mecha seconds to short dwell t	Project D027 - Improved Launcher Mechanical System (ILMS): This project provides for the Engineering at ILMS will decrease the stow-to-aim point timeline, enhance effectiveness in engaging and supporting the force replace selected components of the MLRS M270 launcher mechanical drive system. The time required for a position to first rocket away will be reduced from 93 seconds to 16 seconds. Reload operations for twelve These improvements will allow faster engagement of short dwell time targets and increase crew survivability on apport costs are expected with the design. When combined with the Improved Fire Control System, the launcher	ject provides engaging and ystem. The t Reload oper. nd increase of	for the Eng d supporting time require ations for tw crew survive System, the l	incering the force, d for velve ubility on
Acquisition Strateg awarded to Lockhee	Acquisition Strategy: This is an ACAT III program with a 38-month EMD phase ending in FY 98 and fielding beginning in FY 00. A sole source contract for EMD was awarded to Lockheed Martin Vought Systems (LMVS) in August 1995.	n with a 38-m VS) in Augusi	month EMD part 1995.	phase ending	g in FY 98 aı	nd fielding b	eginning in	FY 00. A so	de source co	intract for El	MD was
FY 1996 Accomplishments:	hments: Hardware and software design GFE Retrofit Kits Minor tasks including in-house	E 93									
FY 1997 Planned Program:	rogram: Software development qualification, hardware delivery, qualification testing System Integration GFE launcher modifications Minor tasks including in-house Small Business Innovation Research/Small Business Technology Transfer (S	cation, hardw e search/Small	are delivery Business Te	, qualificatic	on testing ransfer (SBI	ware delivery, qualification testing	ograms				
Project D027				Page 2 of 19 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0603778A)	603778A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEM JUS	TIFICAT	ION SE	IEET (R	-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development	ııt		PE NU 060	PE NUMBER AND TITLE 0603778A Multi Product Improv	ritle fultiple L rovemen	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy m			РКОЈЕСТ D027
FY 1998 Planned Program:	esno									
FY 1999 Planned Program: Project not funded in FY 99	in FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 19253 19794		FY 1997 27038 26422	FY 1998 14617	FY 1999	66			
Adjustments to Appropriated value FY 1998 Pres Bud Request		20269		26350	14607					
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY2002	FY2003	To Complete	Total Cost
Missile Procurement, Army										
Budget Act 2: MLRS Rocket (C65401) MLRS Launcher (C65900)	81093	0 103703	0 102649	92457	0 158319	208684	216856	230731	CONT	3590032 CONT
ER-MLRS (C65402)	44607	41404	2863	18955	19893	19824	54018	62604	CONT	CONT
Budget Act 3: MLRS Mods (C67500)	27475	6410	2188	2239	2287	2566	2631	2451	CONT	CONT
Duuget Act 4: MLRS Initial Spares (CA0257) MLRS Mod Spares (CA0265)	5077 2051	0	998	7098	8582	16520 885	23150 914	27307 945	CONT	CONT
D. Schedule Profile	FY 1996	4	F)	FY 1997 2 3	4	FY 1998	3 4	-	FY 1999 2 3	4
System Req Rev/System Des Rev Preliminary Design Rev (PDR) Critical Design Rev (CDR)	**	*	*							
Project D027			Page 3 of 19 Pages	9 Pages			Exhib	Exhibit R-2 (PE 0603778A)	3603778A)	
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Product Rough Product Roug	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
((EDT) 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	<u> </u>	PE NUMBER AND TITLE 0603778A Multiple Launch Rocke Product Improvement Program	f man
Page 4 of 19 Pages	Profile FY 1996 1 2 3 Dev Test (EDT) 1 2 3 ests plete 1 2 3	FY 1997 1 2 3 4 1 2 3 X X X	FY 1999 1 2 3
Page 4 of 19 Pages	*Milestone Complete		
			_1

RDT&E PROGRAM ELEMENT/PRO	ROJECT COST BREAKDOWN (R-3)	OST BR	EAKD	OWN (R-	3)	DATE F.	February 1997	797
BUDGET ACTIVITY 7 - Operational System Development	<u>. </u>	PE NUMBER AND TITLE 0603778A Multi Product Improv	AND TITLE A Multip Improve	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	1		PROJECT D027
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support SBIR/STTR Total B. Budget Acquisition History and Planning Information Performing Organizations	EY 1996 17969 1843 457 0 20269	EY 1997 23185 2107 485 645 26422	<u>Y 1997</u> 23185 2107 485 645	FY 1998 9434 2656 2517 0 14607	FY 1999			
d/Type Award or Performing dding Obligation Activity E	Project Office EAC F	Total Prior to EY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
LMVS CPIF AUG 95 SBIR/STTR Support and Management Organizations		2500	17469	21465 645	9434			50868 645
MLRS Project Off RDEC-MICOM Test and Evaluation Organizations		263 134	1065	1633	1297 1359			4258 3390
Range Support Other Test Act Oper Test			377	100 335 50	807 802 908			907 1514 1038
Project D027	Page 5	Page 5 of 19 Pages			Exh	Exhibit R-3 (PE 0603778A)	0603778A)	



RDT&E PROC	RDT&E PROGRAM ELEMENT/P	PROJECT COST BREAKDOWN (R-3)	REAKD	OWN (R-	3)	DATE	February 1997	266
вирдет Астіvіту 7 - Operational System Development		PE NUMBER 060377 Produc	PE NUMBER AND TITLE 0603778A Multip Product Improve	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	Rocket Syram			PROJECT D027
Government Furnished Property Contract Contract Method/Type Award Item or Funding Obligat Description Vehicle Date Product Development Property LMVS CPIF Aug 95 Support and Management Property: None	Award or Obligation Delivery <u>Date</u> Date Aug 95 , ty: None	Total Prior to FY 1996	FY 1996 500	FY 1997 1003	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u> 1503
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		2500 397 2897	17969 1843 457 20269	23113 2752 485 26350	9434 2656 2517 14607			53016 7648 3459 64123
Project D027		Page 6 of 19 Pages	ses		Exh	ibit R-3 (PE (Exhibit R-3 (PE 0603778A)	

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RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	197
вирсет Астіvіту 7 - Operational System Development	ıt		PE NI 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	aunch R nt Progra	ocket Sy m	stem	-	PROJECT D050
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D050 Improved Fire Control System	34865	25773	0	0	0	0	0	0	0	140330

A. Mission Description and Budget Item Justification Project D050 - Improved Fire Control System (IFCS): The current MLRS Fire Control System provides position equipment (BITE) to the circuit card and cable level and will provide growth capabilities for existing and future MLRS Family of Munitions (MFOM) weapon systems. data, communication interface through which fire missions are received, processes data, controls the launcher, inputs mission critical data to the weapons and fires the weapon. This project provides for the Engineering and Manufacturing Development (EMD) of an IFCS which will correct present and future supportability problems resulting from electronic component obsolescence in the existing design. This effort will result in reduced operation and support costs due to addition of built-in test

Acquisition Strategy: IFCS is an ACAT III program with a 60-month EMD phase ending in FY 97 and fielding beginning in FY 00. A sole source contract was awarded to Lockheed Martin Vought Systems (LMVS) in September 1992. Sole source was determined necessary due to the integration of the IFCS into the existing MLRS design, responsible for systems and perform the interface/design efforts for integrating the IFCS into the MFOM. The MLRS, as an internationally co-developed and co-produced and due to the mechanical, electrical, and software interface with all rockets, missiles, and munitions utilizing the MLRS launcher. It is essential that the source be system, must have computer software with common application to be utilized by the sponsor countries.

FY 1996 Accomplishments:

- Engineering development test of hardware, system integration test & subsystem level qualification test 30088
 - 545 Redstone Technical Test Center (RTTC) environmental qualification testing
 - יישטם שטון
 - 1600 FCP trainer development
- 2632 Minor tasks including in-house
- Total 3486

FY 1997 Planned Program:

- 21625 System integration tests, flight tests, extended system integration tests
 - 1000 EMD contract award fee
- 450 White Sands Missile Range (WSMR) test and software
- 2068 Minor tasks including in-house
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
- tal 25773

Project D050

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEM JUS	TIFICA	TION SH	HEET (F	8-2 Exhi	bit)		DATE Fe	February 1997	97
вирсет Астіvіту 7 - Operational System Development	ment		PE NI 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	TITLE Multiple L provemer	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy m			PROJECT D050
FY 1998 Planned Program: Project not funded in FY 98	ided in FY 98									
FY 1999 Planned Program: Project not funded in FY 99	ded in FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 33506 3448	H	FY 1997 26324 25773	FY 1998 0	FY 1999 0	0 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		+417		25773	0		0			
C. Other Program Funding Summary Missile Procurement, Army	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY2002	FY2003	.To <u>Complete</u>	Total Cost
Dudget Act 2. MLRS Rocket (C65401) MLRS Launcher (C65900) ER-MLRS (C65402) Budget Act 3:	81093 44607	0 103703 41404	0 102649 2863	0 92457 18955	0 158319 19893	0 208684 19824	216856 54018	230731	0 CONT	3590032 CONT CONT
MLRS Mods (C67500) Budget Act 4:	27475	6410	2188	2239	2287	2566	2631	2451	CONT	CONT
MLRS Initial Spares (CA0257) MLRS Mod Spares (CA0265)	5077 2051	0	998	7098	8582 500	16520 885	23150	27307 945	CONT	CONT
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	1	FY 1998	∞ r	-	Y 199	
Qualification Test Sys Integration Test Test Firings MS III A Contract Complete * Milestone Complete.			· *	1	· × ××			-	7	4
Project D050			Page 8 of 19 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0603778A)	303778A)	

RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	PROJECT COST BREAKDOWN (R-3)	SOST BI	REAKDO	JWN (R-	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	velopmen	ıt		PE NUMBER AND TITLE 0603778A Multi Product Improv	RAND TITLE 3A Multip 1 Improve	e number and title 0603778A Multiple Launch Roc Product Improvement Program	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	1	.	PROJECT D050
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support SBIR/STTR Total			EY 1996 30088 4087 690 34865	FY 2	FY 1997 22625 1988 530 630 25773	EY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Vehicle Date E.	Planning Inf Award or Obligation Date	formation Performing Activity EAC	Project Office EAC	Total Prior to	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations LMVS CPIF SBIR/STTR	SEP 92			67705	30088	21995 630				119788
Support and Management Organizations Support Contract MLRS Project Off RDEC-MICOM Test and Evaluation Organizations	ations			4357	1921	1555				7833
Develop Test Spt Government Furnished Property Contract				289	069	530				1907
Method/Type Item or Funding Description Vehicle Product Development Property	Award or Obligation <u>Date</u>	Delivery <u>Date</u>		Total Prior to FY 1996	FY 1996	FY 1997	FY1998	FY1999	Budget to Complete	Total Program
GFE CPIF SEP 92 Support and Management Property: None	SEP 92 y: None			1796						1796
Project D050			Page	Page 9 of 19 Pages	zes		Exh	Exhibit R-3 (PE 0603778A)	0603778A)	
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RDT&E PROGRAM ELEMENT/PR	/PROJECT COST BREAKDOWN (R-3)	REAKDO	JWN (R-	3)	DATE	February 1997	700
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0603778A Multi Product Improv	AND TITLE A Multipl Improver	PENUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	Rocket S		, and a second	PROJECT D050
Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Test and Evaluation Property: None	Total Prior to FY 1996	FY 1996	FY 1997	FY1998	FY1999	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	69501 9504 687 79692	30088 4087 690 34865	22625 2618 530 25773				122214 16209 1907 140330
Project D050	Page 10 of 19 Pages			Н	Fyhihit R.3 (DE OR03778A)		
						(10000	14

ent 0	RDT&E BUDGET ITEM JUSTIF	bit) DATE	February 1997
0603778A Multiple Launch Rocket System Product Improvement Program	BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
Product Improvement Program	7 - Operational System Development	0603778A Multiple Launch Rocket System	D054
		Product Improvement Program	

COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D054 Extended Range Rocket	13717	10681	0	0	0	0	0	0	0	85080

Manufacturing Development (EMD) of an ER-MLRS. The ER-MLRS will enhance the capability of the existing MLRS by providing improvements in range, accuracy, A. Mission Description and Budget Item Justification: Project D054 - Extended Range -MLRS (ER-MLRS): This project provides for the Engineering and effectiveness, and maneuver force safety.

measurement device (WMD) and no-load detent system to sustain accuracy at increased ranges. The acquisition alternative most advantageous to the Government was for a Acquisition Strategy: The ER-MLRS acquisition strategy is a streamlined product improvement program which permits entering Low Rate Initial Production (LRIP) and subsequent Full-Scale Production after completion of a 54-month EMD program. The primary objective of the EMD phase is to develop and qualify a successor rocket to sole source EMD contract to the system prime contractor, Lockheed Martin Vought Systems (LMVS), containing a requirement to increase subcontract competition for incorporate the results of other development efforts for a new submunition with a self-destruct fuze to reduce the hazards to friendly maneuver dud rate; and a wind the MLRS basic M26 with extended range capability and with minimum impact on existing basic MLRS companion hardware and software. This effort will also subsystems and components.

FY 1996 Accomplishments:

- WMD integration and preproduction qualification test
 - Complete ballistic algorithm flight test 2085
 - Fuze development 2068
- Software Design Integration EMD 2200
- Minor tasks including in-house and Milestone Decision Review IIIA preparation 2031
 - 3717 Total

FY 1997 Planned Program:

- WMD integration 2100
- Software integration and test 2934
 - Fuze development 776
- Software IV & V testing and audits 2148
- Minor tasks including in-house and Milestone Decision Review III preparation 2267
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 255
 - 0681 Total

Project D054

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BUDGET ACTIVITY 7 - Operational System Development			PE NI 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	TITLE Multiple L Proveme	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy m	1		РРОЈЕСТ D054
FY 1998 Planned Program: Project not funded in FY 98 FY 1999 Planned Program: Project not funded in FY 99	FY 98 FY 99									
B. Project Change Summary FY 1997President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 17844 18344 -4627 13717	a	EY 1997 10909 10681 10681	FY 1998	FY 1999	66			
Change Summary Explanation: FY 96 funding reprogrammed within program element for IFCS and ILMS.	ogrammed wi	thin progran	n element fo	r IFCS and	ILMS.					
C. Other Program Funding Summary Missile Procurement, Army	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY2002	FY2003	To Complete	Total Cost
MLRS Rocket (C65401) MLRS Launcher (C65900) ER-MLRS (C65402)	81093 44607	0 103703 41404	0 102649 2863	0 92457 18955	0 158319 19893	0 208684 19824	216856 54018	230731 62604	0 CONT CONT	3590032 CONT CONT
Budget Act 3. MLRS Mods (C67500) Budget Act 4.	27475	6410	2188	2239	2287	2566	2631	2451	CONT	CONT
MLRS Initial Spares (CA0257) MLRS Mod Spares (CA0265)	5077 2051	0	998	7098	8582	16520 885	23150	27307 945	CONT	CONT
hedule Profile	FY 1996 2 3	4	F. 2	FY 1997 2 3	4	FY 1998 2 3	3 4	-	FY 1999 2 3	4
MSIII A IFCS Rocket Mgr FQT PPQT III (SDF Qual) Contract Complete *Milestone Complete.	*		×	×	×					
Project D054			Page 12 of 19 Pages	19 Pages			Exhib	Exhibit R-2 (PE 0603778A))603778A)	
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RDT&	E PROG	RDT&E PROGRAM ELEMENT/	EMENT/PF	PROJECT COST BREAKDOWN (R-3)	SOST B	REAKD	OWN (R-	3)	DATE F.	February 1997	997
вир бет Асті VITY 7 - Operational System Development	ystem De	velopmen	ıt.		PE NUMBER 0603778 Produc	PE NUMBER AND TITLE 0603778A Multip Product Improve	PE NUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	1		PROJECT D054
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support SBIR/STTR Total	<u>down</u> Support Support pport			FY 1996 9601 2031 2085 13717	EY 1	EY 1997 6011 2267 2148 255 10681	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Vehicle Date E.	on History and ations Contract Method/Type or Funding	Planning Infi Award or Obligation Date	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
: Developmen	nt Organization CPIF	ns DEC 92			24434	2200	2734				29368
LMVS CI KDI SBIR/STTR	CPIF	SEP 92 JUN 93			21903 4129	5333 2068	2045 977 255				29281
Support and Management Organizations MLRS Project Off RDEC-MICOM	nent Organiz	ations			2632 4735	975 1056	1135				4742. 7178
Test and Evaluation Organizations Develop Test Spt	rganizations				2849	2085	2148				7082
Government Furnished Property		Not Applicable.	<u>e</u> .								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	opment anagement ation				50466 7367 2849 60682	9601 2031 2085 13717	6011 2522 2148 10681				66078 11920 7082 85080
Project D054				Page	Page 13 of 19 Pages	ges		Exhil	oit R-3 (PE	Exhibit R-3 (PE 0603778A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	r ITEM JUS	TIFICA	TION S	HEET (F	2-2 Exhi	bit)		DATE Fe	February 1	1997
BUDGET ACTIVITY 7 - Operational System Development	nent		PE N 060 Prc	PE NUMBER AND TITLE 0603778A Multi Product Improv	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	aunch R it Progra	ocket Sy m	stem	_	PROJECT D093
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D093 Army Technical Architecture	0	0	863	2617	2235	1823	8943	6962	Continuing	Continuing
A. Mission Description and Budget Item Justification: Project D093 - MLRS Army Technical Architecture (ATA): MLRS ATA will consist of three phases. Phase 1 (FY 98-00) will integrate the Force XXI/ATA mandated 188-220A protocol and convert existing MLRS fire support messages to Variable Message Format (VMF) for M270A1 launchers. ATA Phase 2 (FY 01-06) hardware and software development effort will implement Force XXI situational awareness and ATA soldier-computer interface mandates for M270A1 launchers. Phase 2 increased Force XXI capabilities include addition of a digitized map, addition to the standard MLRS mission message set and implementation of X Windows/Motif standard software display. Phase 3 starting in FY06 will provide a new launcher fire control system (FCS) to mitigate technology obsolescence, meet projected needs of new weapons, and achieve maximum compliance of the ATA mandates.	stification: Proj. A mandated 188-2 hardware and sof ase 2 increased F andard software of mother fire contro	ect D093 - N 220A protoc tware develi orce XXI cal display. I system (FC	MLRS Army of and conve opment effor pabilities inc	y Technical. The existing the transfer addition to the technolog.	Architectur ILRS fire su nent Force X n of a digitiza y obsolescen	e (ATA): Noport messagi XI situation ed map, addi ce, meet pro	ILRS ATA verial all awareness ition to the sijected needs	will consist of Message s and ATA s tandard MLI of new wea	of three phas Format (VIN coldier-comp RS mission 1	es. Phase IF) for uter nessage chieve
Acquisition Strategy: The ATA standards will be implemented in three phases for the M270A1 launcher to perform the Force XXI capabilities. In Phases I and II, the M270A1 FCS will implement software reuse and hardware GFE/COTS to the maximum extent possible within hardware capabilities and M270A1 operational requirements. In Phase III, the M270A1 FCS hardware and software will be redesigned and replaced with a new FCS.	III be implemente nd hardware GFE oftware will be re	d in three ph /COTS to th designed and	lases for the le maximum d replaced w	M270A1 łau extent possii ith a new FC	incher to perf ble within ha	form the For rdware capa	ce XXI capa bilitics and I	bilities. In l M270A1 ope	Phases I and erational req	II, the uirements.
FY 1996 Accomplishments: Project not funded in FY 96	d in FY 96									
FY 1997 Planned Program: Project not funded in FY 97	d in FY 97									
FY 1998 Planned Program: • 600 Develop New Communication Interface • 263 Minor Tasks Including In-House Total 863	ation Interface 1-House									
 FY 1999 Planned Program: 1200 Develop VMF and Dual Protocol Logic Software 500 Development Testing 917 Minor Tasks Including In-House Total 2617 	Protocol Logic Sc -House	oftware								
Project D093			Page 14 of 19 Pages	19 Pages			Exhibit	Exhibit R-2 (PE 0603778A)	603778A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SE	HEET (R	-2 Exhi	bit)		DATE	February 1997	797
вирсет астіvіту 7 - Operational System Development			PE NL 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	firle fultiple L rovemen	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ocket Sy n			PROJECT D093
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996		FY 1997 0	FY 1998 0	FY 1999	0 0			
FY 1998 Pres Bud Request Change Summary Explanation: FY 98/99 funding adjustments (+863/+2617) to establish the MLRS ATA program.	djustments (-	- 0 +863/+2617)) to establish	0 the MLRS	863 ATA progran	2617 m.	7			
C. Other Program Funding Summary	FV 1096	FV 1007	FV 1009	EV 1000	EX 2000	100C VI	00000		To	Total
Missile Procurement, Army BUDGET ACT 2:		1001 1	1.1.1220	1 1 1 1 2 2 2		F Y 2001	F Y 2002	FY2003	Complete	Cost
MLRS RKT (C65401) MLRS LAUNCHER (C65900)	0 81093	0 103703	0 102649	92457	0 158319	0 208684	216856	230731	O CONT	3590032
ER-MLRS (C65402) BUDGET ACT 3:	44607	41404	2863	18955	19893	19824	54018	62604	CONT	CONT
MLRS MODS (C67500) BUDGET ACT 4:	27475	6410	2188	2239	2287	2566	2631	2451	CONT	CONT
MLRS INITIAL SPARES (CA0257) MLRS MOD SPARES (CA0265)	5077 2051	0	998	7098 635	8582	16520 885	23150	27307 945	CONT	CONT
D. Schedule Profile	FY 1996	-	FY	FY 1997		Y 199		,	V 199	
ATA COM INTERFACE ATA CONTRACT AWARD ATA PDR		+	7	n	1	¬ ×	4	-	3 X	4 X
·										
Project D093			Page 15 of 19 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0603778A)	603778A)	

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RDT&E PROGRAM ELEMENT/PR	PROJECT (COST B	REAKD	COST BREAKDOWN (R-3)	(5)	DATE	February 1997	266
вирдет Астілітү 7 - Operational System Development		PE NUMBER AN 0603778A Product In	PE NUMBER AND TITLE 0603778A Multip Product Improve	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	n Rocket (gram			PROJECT D093
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support Total	FY 1996	EY	FY 1997	FY 1998 863 863	FY 1999 1200 917 500 2617	9 7 7		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TBD CPIF MAR 99 Support and Management Organizations		0	0	0	0	1200	Cont	1200
Support Contract MLRS Project Off RDEC-MICOM Test and Evaluation Organizations		0 0	0	0	600	200 409 308	Cont Cont	800 672 308
Develop Test Spt Government Furnished Property: Not Applicable		0	0	0	0	200	Cont	200
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					863	1200 917 500 2617		1200 1780 500 3480
Project D093	Page	Page 16 of 19 Pages	ies		Exhi	Exhibit R-3 (PE 0603778A)	0603778A)	

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RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE FeI	February 1997	760
BUDGET ACTIVITY 7 - Operational System Development	ı,		PENI 060 Pro	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	ritle fultiple L rovemen	aunch R	ocket Sy m	stem		РРОЈЕСТ D784
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D784 Guided Multiple Launch Rocket System	0	0	11208	19228	21806	27601	11000	0	0	90843

A. Mission Description and Budget Item Justification Project D784 - Guided Multiple Launch Rocket System (GMLRS): This project provides for the Engineering and Manufacturing Development (EMD) of a GMLRS that will greatly enhance the capability of the existing MLRS by providing greater range and significantly enhanced accuracy. Since fewer rockets are required to defeat a target, logistics burden will also be reduced. The GMLRS will result in reduced mission times and increased survivability of the system.

significantly enhanced accuracy with a minimum impact on existing MLRS companion hardware and software. This effort will incorporate the results of other development Acquisition Strategy: The GMLRS acquisition strategy is a streamlined product improvement program which permits entering Low Rate Initial Production (LRIP) and subsequent Full-Scale Production, after completion of a 48-month EMD program. The primary objective of the EMD phase is to develop a rocket with greater range and efforts for a modified submunition and an extended range rocket motor for increased range. The acquisition alternative most advantageous to the government is a sole source EMD contract to the system prime contractor, Lockheed Martin Vought Systems (LMVS).

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Simulation Development, Define and Design Code Software
 - Wind Tunnel Testing 1200
- Minor Tasks Including In-House 2000

1208 Total

FY 1999 Planned Program:

- Assembly of Components, Component Lab Testing and Static Tests 15128
- WSMR Test Studies 800
- Independent Analysis 400
- Minor Tasks Including In-House 2900

19228

Project D784

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEN	SUC N	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE	February 1997	797
BUDGET ACTIVITY 7 - Operational System Development	oment	·		PE NI 060 Pro	PE NUMBER AND TITLE 0603778A Multi Product Improv	TITLE Multiple L Provemen	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program	cket Sy n			PROJECT D784
B. Project Change Summary FY 1997 President's Budget Appropriated Value			FY 1996		FY 1997 0	FY 1998	FY 1999 0	6 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request				0	0	11208	19228	∞			
Change Summary Explanation: Funding - FY 98/99 funding adjustments to provide for Engineering and Manufacturing Development (EMD) of the GMLRS (FY 98 +11208/FY 99 +19228)	Funding - FY 98/99 funding ad (FY 98 +11208/FY 99 +19228)	8/99 fund/FY 99 +:	ling adjustn 19228)	nents to prov	/ide for Engi	ineering and	Manufacturir	ig Develop	ment (EMD) of the GMI	RS
C. Other Program Funding Summary	Ē	FY 1996	FY 1997	FY 1998	FY 1998 FY 1999	FY 2000	FY 2001	FY2002	FY2003	To	Total
Missile Procurement, Army Budget Act 2:											i con
MLRS Rocket (C65401) MLRS Launcher (C65900)		0 81093	0 103703	102649	92457	0 158319	0 208684	216856	230731	CONT	3590032 CONT
ER-MLRS (C65402)		44607	41404	2863	18955	19893	19824	54018	62604	CONT	CONT
Budget Act 3: MLRS Mods (C67500) Budget Act 4:		27475	6410	2188	2239	2287	2566	2631	2451	CONT	CONT
MLRS Initial Spares (CA0257) MLRS mod spares (CA0265)		5077 2051	0 1829	998	7098	8582 500	16520 885	23150	27307 945	CONT	CONT
D. Schedule Profile	, i	Y 199		F. (FY 1997		Y 199			Y 199	
Contract Award Simulation Development Wind Tunnel Test Preliminary Design Rev	7	v)	4	7	m	4	6 X X	4 >	-	3	4
S/W CDR								<		×	
Project D784			į	Page 18 of 19 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0603778A)	603778A)	

RDT&E PROGRAM ELEMENT/P	PROJECT COST BREAKDOWN (R-3)	COST B	REAKD	OWN (R-	3)	DATE	February 1997	766
BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0603778A Multi Product Improv	AND TITLE SA Multip Improve	PENUMBER AND TITLE 0603778A Multiple Launch Roc Product Improvement Program	PE NUMBER AND TITLE 0603778A Multiple Launch Rocket System Product Improvement Program			PROJECT D784
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Developmental Test Support Total	FY 1996		FY 1997	EY 1998 8008 2000 1200 11208	EY 1999 15128 3300 800 19228			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date	Project Office FAC	Total Prior to FY 1996	FV 1996	FY 1997	FV 1998	FV 1999	Budget to	Total
86					8008	15128	44900	68036
Support and Management Organizations MLRS Project Off RDEC-MICOM					1100	1800	5800	8700
Test and Evaluation Organizations Develop Test Spt					1200	800	4407	6407
Government Furnished Property: Not Applicable								
Subtotal Product Development Subtotal Support and Management					8008	15128	44900	68036
Subtotal Test and Evaluation Total Project					1200	800	4407	6407
Project D784	Page	Page 19 of 19 Pages	ses		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0603778A)	
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RDT&E BUDGET ITEM J	EM JUS	TIFICA	TION S	USTIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe	February 1997	197
вироет Астіvітү 7 - Operational System Development	+		PE NI 070 Mai	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	IITLE Vrmy Indu ng Techi	ustrial Pr nology	eparedn	ess		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23699	47819	44326	50086	52273	54456	56291	58392	Continuing	Continuin
DE25 Manufacturing Science and Technology	23699	47819	11029	15211	15937	16559	16949	17389	Continuing	Continuin
DE26 Weapon Systems Modernization Software Maintenance	0	0	33297	34875	36336	37897	39342	41003	Continuing	Continuin

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manufacturing issues and the U.S. industrial base. The Army ManTech Strategic Plan definitizes projected requirements, objectives and technical approaches. The Weapon Systems Modernization Software Maintenance. The goals of the Army ManTech program include: to develop advanced manufacturing processes, equipment and systems, avionics command and control (C2), fire support (FS), training and simulation, maneuver control (MC), and tactical fusion (TF). The work performed in project DE26 was A. Mission Description and Budget Item Justification: This program element comprises two projects: Manufacturing Science and Technology (ManTech) and Weapon including electronics manufacturing, metals fabrication and processing, composites processing, manufacturing systems and advanced industrial practices offer the potential Systems Modernization Software Maintenance project provides funding for modernization programs in which post-production embedded weapon system software must be important in the current environment because the significant decline in weapon system production investments has had a severe negative impact on the ability to advance for high payoff across the spectrum of Army weapon systems. In addition, many of the manufacturing technologies addressed may have significant impact on national manufacturing technology, since advances previously were primarily addressed within individual production programs. Technology areas supported by this initiative, to enhance quality and reduce cost of Army materiel, and to transfer improved manufacturing technologies to the industrial base. The ManTech program is especially upgraded and/or enhanced, as well as life cycle software engineering in the areas of tactical and satellite communications, intelligence and electronic warfare (IEW), formerly funded in the Operations and Maintenance, Army appropriation. The mission, and associated funding, are transferred to the RDT&E, Army appropriation, beginning in FY 1998, to represent more appropriately actual software maintenance costs associated with weapons systems.

This program element is assigned to Budget Activity 7 since it includes projects that support the development of processes in technological feasibility assessment, weapon systems in development or production, and modifications/upgrades to or sustainment of fielded systems.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	≀-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development			PEN 070 Ma	PE NUMBER AND TITLE 0708045A Army Manufacturing 1	e number and title 0708045A Army Industrial Preparedness Manufacturing Technology	ıstrial Pr nology	eparedn	ess		PROJECT DE25
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost

Continuing

Continuing

17389

16949

6559

15937

15211

11029

47819

23699

DE25 Manufacturing Science and Technology

A. Mission Description and Justification: The goals of the ManTech program include: to develop advanced manufacturing processes, equipment and systems, to enhance including electronics manufacturing, metals fabrication and processing, composites processing, manufacturing systems and advanced industrial practices, offer the potential Man Tech Strategic Plan definitizes projected requirements, objectives and technical approaches for seven specific thrust areas. These are: Air Vehicles, Ground Vehicles, Munitions, Missiles, Electronics, Advanced Topics, and Process Development. The Army ManTech program funds a variety of individual tasks, each of which addresses a for high payoff across the spectrum of Army weapon systems and to have significant impact on national manufacturing issues and the U.S. industrial base. The Army quality and reduce cost of Army materiel, and to transfer improved manufacturing technologies to the industrial base. Technology areas supported by this initiative, pervasive manufacturing issue associated with weapon systems. A variety of acquisition strategies including firm fixed price contracts, Cooperative Research and Development Agreements, cost sharing arrangements, and utilization of DoD Manufacturing Centers of Excellence are used to complete tasks.

Acquisition Strategy: The Army ManTech program funds a variety of individual tasks, each of which solves a pervasive manufacturing issue associated with weapon systems. The ManTech program uses a variety of acquisition strategies including firm fixed price contracts, Cooperative Research and Development Agreements, cost sharing arrangements, and utilization of DoD Manufacturing Centers of Excellence to complete tasks.

FY 1996 Accomplishments:

- 6090 Air Vehicles
- Completed investment casting process demonstration for beryllium aluminum used in air vehicles, wrote technical report for the investment casting process development, and initiated process development work for recycling of beryllium aluminum.
 - Completed integrated composites manufacturing integrated product and process development (IPPD), performed risk reduction work, established processes, and constructed tooling to co-cure baseplates for demonstration on the Longbow Apache Fire Control Radar System.
 - Performed risk reduction work, incorporated changes to the resin transfer molding tool, and built the first demonstration article for Comanche by using prepreg material for improved airframe manufacturing technology.
- Initiated manufacturing techniques for a fiber optic harness segment system used in advanced helicopters such as Comanche.
- Completed manufacturing adhesives bonding study using environmentally friendly surface pretreatments for various fiber matrix composites.
 - Accomplished consolidation of the heat treatment facility with the machining center for the Instrumented Factory for Gears (INFAC)
 - Continued development of the improved grinding process for spiral bevel gears.
- Completed 30% state-of-the-art review for net shape forging of precision gears.
- Continued the feasibility study and conceptual design for an automated gear deburring system.

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Project DE25





February 1997 DATE 0708045A Army Industrial Preparedness Manufacturing Technology RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 7 - Operational System Development **BUDGET ACTIVITY**

DE25

FY 1996 Accomplishments: (continued)

- Conducted face to face interviews with the three out of the six gear producers selected to determine applicability of common requirements and quality systems for precision gears.
 - Ground Vehicles 550
- Completed successful demonstrations of weld processes on titanium ballistic targets and established a ballistic test plan.
- vehicles/year to include a redesigned silicon carbide metal matrix Bradley shoe, designed and fabricated a full-scale representative road wheel test - Conducted automated fiber placement and production scale-up study for the Composite Armored Vehicle (CAV) associated with producing 300 section using a space frame design, and performed tooling trials to fabricate a 16'x4'x0.5" structural thermoplastic part using a double-diaphragm molding process.

7440

- · Demonstrated the feasibility of using epitaxial lift-off technology to manufacture ultra-violet/infra-red (UV/IR) stacked missile seeker arrays and developed processes for making two-layer optically-integrated image processors
 - Developed flexible manufacturing cells and processes for millimeter wave (MMW) transceiver pilot line.
- Developed and demonstrated new manufacturing processes for applying electromagnetic interference coatings on missile seeker domes and completed final report.
 - Demonstrated new manufacturing processes for making Staring Class Focal Plane Array Dewar Assemblies and completed final report.
- Developed techniques for detecting crossover patterns in the winding of missile optical fiber bobbins and implemented the automated winder on the Enhanced Fiber Optic Guided Missile Engineering and Manufacturing Development line to baseline future development requirements.
 - Developed initial set of integrated process and product development tools and implemented the initial test beds at four Missile Command project
- Completed Phase I and initiated Phase II in the development of a thermal test chuck used for simultaneously testing and stress screening high power electronic wafers over the -55C to +125C temperature range.
 - Initiated development of flexible manufacturing processes to establish a domestic production capability for a family of polyacrylonitrile (PAN) based, ultra high-modulus, high-strength carbon fibers for light weight, high performance, and stealthy structural applications including missile airframe and kinetic kill vehicles, aircraft airframes, and military spacecraft and satellite structures.

Electronics 3031

- tooling design for high throughput array hybridization, wafer level anti-reflective coat and polish, wafer screen cryoprobing, ultrasonic tape automated - Completed high and mid-to-high performance focal plane array (FPA) standard advanced Dewar assembly (SADA) process development and bonding (TAB) and implemented all processes into the Low Rate Initial Production of Thermal Weapon Sights units.
 - Completed effort on testing large area uncooled FPAs and integration of the detector tester/
- Developed a dynamic pyroelectric test that emulates system operation for the non-destructive detector array production testing.

Project DE25

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Exhibit R-2 (PE 0708045A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IN SHEET (R-2 Exhibit) DATE February 1997
BUDGET ACTIVITY 7 - Operation	вирдет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness DE25 Manufacturing Technology
FY 1996 Accom	FY 1996 Accomplishments: (continued)	
	 Planned to complete contractual efforts upon release of funding to adapt high volume production tecl technologies in military-unique form/fit applications for advanced non-metallic rechargeable batteries. 	- Planned to complete contractual efforts upon release of funding to adapt high volume production techniques to utilize lithium-ion and other battery technologies in military-unique form/fit applications for advanced non-metallic rechargeable batteries.
3300		
	 Initiated live demonstration of continuous processing system. Completed hydroxylamine nitrate (HAN) process technology demo Initiated triethanolammonium nitrate (TEAN) process optimization. 	s processing system. process technology demonstration. AN) process optimization.
	 Developed and tested alternative methods of computer sin productivity. 	- Developed and tested alternative methods of computer simulation analysis procedures for munitions Load Assemble Pack (LAP) process to enhance productivity.
	- Initiated efforts in the development of processes for the Objective Individual Combat Weapon (OICW). - Continued to modify optical grinding equipment and specifically improve Optican magnetorheological	- Initiated efforts in the development of processes for the Objective Individual Combat Weapon (OICW). - Continued to modify optical grinding equipment and specifically improve Optican magnetorheological finishing (MRF) machine prototyne based
	on process studies and pilot production runs.	
	- Performed validation pilot production runs on modified Opticam MRF.	pticam MRF.
	 Expanded MRF process data base to high hardness and electro-optic materials. 	ectro-optic materials.
	- Assembled and tested subassemblies for Opticam AM prototype machine	stotype machine.
	- Assembled and acceptance tested Opticam Aivi prototype for tablication of aspirence lenses in optical glass. Incompared non-contact matrology into deterministic microgrinding process on Opticam CV or Opticam I	 Assembled and acceptance tested Opticant AiM prototype for faorication of aspirence tenses in optical glass. Incorporated non-contact matrology into deterministic mirrographing process on Optican CX or Optican DM machines.
	- incorporated non-contact menology into deterministic micros	ogy.
	- Conducted industrial demos to promote and transition Opticam technology to US optics industry.	ticam technology to US optics industry.
• 2503	V	
	 Awarded contract to install blade inspection system for n test. 	Awarded contract to install blade inspection system for non-contact measurement of propulsion system components and conducted demonstration sst.
	 Awarded contract to conduct field tests of parts produced in laser forming titanium structures without mold. Initiated testing; initiated simulation on injection molding of composite components for CAV. 	in laser forming titanium structures without mold. of composite components for CAV.
	- Demonstrated virtual environment.	
	 Delivered and installed remanufacturing ultrasonic cleaning system for AH64 Ap Completed supercritical carbon dioxide optical parts/assemblies cleaning system. 	ultrasonic cleaning system for AH64 Apache servovalve assemblies. ptical parts/assemblies cleaning system.
	- Evaluated several M1 tank engine parts coated with High Velocity Oxygen Fuel (HVOF) spray Initiated process optimization trials for Smartweave In-Situ Sensors; awarded contract to develo	- Evaluated several M1 tank engine parts coated with High Velocity Oxygen Fuel (HVOF) spray Initiated process optimization trials for Smartweave In-Situ Sensors; awarded contract to develop hardware, software and initial prototype to inspect
	additional flaw classes for Nondestructive Visualization Using 3D/X-ray Laminography.	ing 3D/X-ray Laminography.

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Project DE25



implementation plan for transition of demonstrated changes, conduct government/industry end-of-project briefings and complete final technical report. - Develop and demonstrate process for using beryllium aluminum recycled material in production of precision casting; complete government/industry Selected reverse-osmosis as a viable and economical food-drying process, successfully infused nutrients into foods under laboratory conditions for PROJECT **DE25** - Develop fabrication and assembly process models to detail sequence of activities in manufacturing composite hull/armor components for the CAV. - Awarded contract and achieved significant progress in development and evaluation of alternate Micro-Electro-Mechanical Systems designs of a - Completed process scale-up to 150-liter fermentation of genetically engineered microbial anti-toxin antibody used in chemical detection system. - Develop austempering/ausforming manufacturing processes for ductile iron and produce vehicle track components for metallurgical analysis and - Complete demonstration in pilot production environment, define benefits based on established metrics, complete validation of computer model. February 1997 management, engine focused factory, heat blanket prototype, flexible static blade balancing, preventive and predictive expert system for design - Demonstrate automated deburring process, and continue development of improved grinding and net shape forming for the INFAC - develop - Completed prototype sorption and permeation test apparatus and implemented at the Defense Personnel Supply Center, the Soldier System - Completed scale-up of fermentation process of thermophilic microbe to 150-liter scale used as a heat-stable enzyme for detection systems - Develop rotary wing aircraft sustainment initiative at Corpus Christi Army Depot to include applied development to material state based - Continue material characterization and development of manufacturing processes for welding titanium into turret structures. 0708045A Army Industrial Preparedness - Awarded contract to purchase ultraviolet technology for stitchless-seams and to refine prototype ceramic plates. economic production of semi-dry rations, and placed product samples into accelerated storage testing. Manufacturing Technology - Complete Comanche fiber-placed rotor blade spar mandrel design, and fabricate mandrel and spar. RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) - Completed integrated product and process development of Next Generation Body Armor. PE NUMBER AND TITLE vibratory rate microgyroscope for low cost solutions to position sensing problems. optimization, and a pilot system for surface stress relief of aircraft parts. briefing, and complete final technical report. 7 - Operational System Development Command and DuPont. Process Development process confirmation. FY 1996 Accomplishments: (continued) Ground Vehicles Air Vehicles FY 1997 Planned Program: 785 2550 BUDGET ACTIVITY Total

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Project DE25

Exhibit R-2 (PE 0708045A)

	RDT&E BUDGET ITEM JUSTIFICATI	IIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operationa	вирдет Астіvіту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	
FY 1997 Planned I • 11100	 FY 1997 Planned Program: (continued) Il 100 Missiles - Demonstrate manufacturing techniques for a 3-5 layer image processor in the Army Combined Arms Weapon System Auto Target Recognition System and a 128 x 128 UV/IR stacked array for potential use in Stinger Block II. - Continue to develop IPPD manufacturing methods for MMW transceivers by integrating and implementing newly developed or improved manufacturing processes and techniques into new or existing work cells to form a pilot production line. - Develop affordable manufacturing capability for traveling wave tubes. - Establish dual domestic source for PAN fibers. 	image processor in the Army Combined Arms Weagal use in Stinger Block II. MMW transceivers by integrating and implementing sting work cells to form a pilot production line. ing wave tubes.	on System Auto Target Recognition ; newly developed or improved
• 1450	Electronics - Conduct accelerated life testing to validate - Build and test high and mid-to- high FPA - Complete procedure development for improvement for imp	Computer Aided Life Cycle Engineering (CALCE) model for physics of failure of electronic equipment. coolers for demonstration and validation of developed processes. roved high throughput non-destructive evaluation test procedures that reduce cost for Javelin/Horizontal	hysics of failure of electronic equipment.
• 21875		n; complete modeling and issue final report detailin ethods to produce high yield, high quality final fuze finishing of aspheric and non-axisymmetric optical optics fabrication; incorporate in-process metrology chinery development and changes. to address manufacturing requirements and shortfals, munitions composites technology, munitions fuza	g productivity improvements of Computer assemblies for OICW System. components. into Opticam machines; adapt software to ils in munitions technologies to include and electronics, munitions thermal
• 2410		⁷ Thermal Spray System, integrate state-of-the-art of into existing Flexible Computer Integrated Manufa depot level composites repair, create a flexible man pters as part of the remanufacturing and reclamation tranium structures without molds, and transition to into ballistic impact damage testing/validation, and de	oen architecture controllers and new cturing facilities. Lifacturing environment for the repair and initiative; demonstrate process for more adustry suppliers. velop expert system.
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- Continue development of improved heat treatment processing for the INFAC, conduct final demonstration of prediction and control of heat treated PROJECT **DE25** distortion of gears, demonstrate net shape manufacturing of gear blanks and initiate effort to demonstrate digital optical-based inspection system for - Conduct final demonstration of integrated composite manufacturing that combines alternative business practices/policies and process technologies composite manufacturing processes for helicopter dynamic rotor components; demonstrate real time adaptive control of automated gas tungsten arc defined during initial assessment and evaluation; continue development and demonstration of improved airframe manufacturing technology using - Complete development of two-color stacked focal plane array for Stinger Block II upgrade and integrate low cost optical fiber link into Tactical February 1997 - Finalize validation testing and implementation of developed processes from the 1 Watt SADA linear drive cooler into the 0.15 Watt Cooler - Develop and implement Computer-Aided Design/Computer-Aided Engineering MMW design tools for at least one Army missile system. production line; test material composition and structure models for validity and alter based on experimental results of computer integrated welding through a joint project with the Navy ManTech program reducing welding time for Comanche and V-22 programs. DATE 0708045A Army Industrial Preparedness · Continue development of manufacturing methods for titanium turrets to reduce the weight of combat vehicles. Establish production methods and improve producibility and affordability of the composite armored vehicle. Manufacturing Technology Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) - Complete development of advanced IPPD design aides and simulation systems for missiles. - Continue cost reduction process improvements to traveling wave tube manufacturing. PE NUMBER AND TITLE - Conduct operational testing on production techniques for dry and semi-dry rations. - Initiate development of production processes for decontamination enzymes. Unmanned Aerial Vehicle (UAV) ground control station. 7 - Operational System Development 290 Process Development FY 1997 Planned Program: (continued) Air Vehicles FY 1998 Planned Program: 47819 350 3077 1650 **BUDGET ACTIVITY** Total

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Project DE25

FPA/Cooler Assembly, FPA fabrication, electronics, display assembly, packaging, and testing; and complete analysis and implementation of physics-

of-failure validation on electronics equipment with demonstration on the ARC-210 radio used on Comanche, Apache and Blackhawk systems.

- Baseline industry manufacturing processes, and generate design of experiments for process selection and development in the areas of uncooled

manufacturing of optical and electro-optical components.

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Exhibit R-2 (PE 0708045A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 7 - Operation	вирсет Астилтү 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	
FY 1998 Planned			
• 1875	 Munitions Initiate continuous processing technology development for pyrotechnic materials, optimize process parameters for manufacture of fine particle explosives and coated energetics, and complete process development efforts for Modular Artillery Charge System (MACS). 	for pyrotechnic materials, optimize process parameters evelopment efforts for Modular Artillery Charge Syster	for manufacture of fine particle m(MACS).
	- Continue manufacturing development of the OICW Sysperecise correction of non-symmetric errors.	the OICW System; prototype and prove out a second generation CNC machine for MRF of optics and	machine for MRF of optics and
• 800	- Apply deterministic optics fabrication techniques to specific military optics manufacturing problems; prototype and prove out a second generation machine for fabrication of optical prisms; develop optimechatronic assembly techniques. Advanced Tonics	cific military optics manufacturing problems; prototypichatronic assembly techniques.	e and prove out a second generation
		lepot-level advanced composites repair and remanufact ades for helicopters.	uring; continue flexible manufacturing
	- Initiate process development for alternator control modules at Red River Army Depot and begin characterization for remanufacturing of helicopter windshields.	iles at Red River Army Depot and begin characterizatic	on for remanufacturing of helicopter
• 1352	Process Development		
	 Develop manufacturing processes for the production of deconfamination enzymes as a replacement for currently used chemical. Develop production techniques for portable sorption fabric testers for chemical protective clothing production and sustainment. Complete development and accelerated life testing for dry/semi-dry rations for soldiers and issue find range. 	production of decontamination enzymes as a replacement for currently used chemicals. ble sorption fabric testers for chemical protective clothing production and sustainment. The testing for dry/semi-dry rations for coldiars and issue final production.	y used chemicals. and sustainment.
Total 11029		17.5cm - ary randing for solutions and issue third report.	
FY 1999 Planned Program:	Program:		
• 2650) Air Vehicles		
	- Continue development at the INFAC of improved heat treatment processing and optimal machining processes for high performance gear materials, and initiate an effort to control residual stresses in ground spiral bevel gears.	reatment processing and optimal machining processes 1 spiral bevel gears.	or high performance gear materials,
	 Complete demonstration of improved airframe manufacturing processes for helicopter dynamic rotor components. Develop an integrated manufacturing system for fiber optic harnesses used in Comanche and future rotary wing vehicles. 	uring processes for helicopter dynamic rotor componeration harnesses used in Comanche and future rotary wing	its.
009		facility for demonstration on gas turbine components.	
4158		anium turrets for combat vehicles.	
		for MMW transceivers for the Hellfire Longbow missile system.	
	 Begin manufacturing process development and testing of microjet aerodynamic control actuators for a miniature missile seeker application; fully implement IPPD tools on at least three Army weapon systems. 	f microjet aerodynamic control actuators for a miniatur ems.	e missile seeker application; fully
Project DE25	P_i	Page 8 of 12 Pages	Exhibit R-2 (PE 0708045A)
		1403	Ifem 152

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		RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit)	DATE February 1997
вироет аститу 7 - Operation	тімтү ationa	вироет Астіміту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology	
FY 1999 I	Planned	FY 1999 Planned Program: (continued)		
•	1950	 Benchmark existing traveling wave tube production processes and begin new/enhanced process. Electronics 	s and begin new/enhanced process.	
		- Finalize model validation, database, and tooling design and h manufacturing properties of electro-optical materials.	and tooling design and hold industry demonstration and complete final report for technology transfer of otical materials.	or technology transfer of
•	3000	 - Begin process development to reduce/eliminate yield limiters, reduce cycle times, improve performance, transition to larger uncooled focal plane arrays (320x240 to 640x480), reduce power consumption, and reduce cost by 10-20%. Munitions 	, reduce cycle times, improve performance, transition treduce cost by 10-20%.	o larger uncooled focal plane
		 Optimize continuous processing technologies for the manufacture of pyrotechnics, complete process technology development for fine particle explosives and coated energetics, and initiate efforts for improved manufacture of primers and initiators. Complete manufacturing development for the OICW System; apply asphere and conformal optics manufacturing capability to specific DoD manufacturing problems. 	mologies for the manufacture of pyrotechnics, complete process technology devinitiate efforts for improved manufacture of primers and initiators. In for the OICW System; apply asphere and conformal optics manufacturing ca	elopment for fine particle pability to specific DoD
•	1200	- Scale up automated optical fabrication techniques applicable to mid-volume production to high volume production. Advanced Topics	o mid-volume production to high volume production.	
	,	- Continue process development for helicopter windshield remanufacturing; complete rotor blade static balancing and depot level advanced composites repair; continue development of laser forming for rapid prototyping of titanium structures to near-net shape.	nnufacturing; complete rotor blade static balancing and apid prototyping of titanium structures to near-net shap	depot level advanced oe.
•	1653	Process Development - Complete second decontamination enzyme optimization, prepare process specification, prepare final report, and conduct project demonstration.	are process specification, prepare final report, and con	duct project demonstration:
		design and construct automated portable permeation test apparatus using purchased state-of-the-art test equipment for use in manufacturing and sustaining chemical protective overgarments.	itus using purchased state-of-the-art test equipment for	use in manufacturing and
Total	15211			
Project DE25	25	Page 9	Page 9 of 12 Pages	Exhibit R-2 (PE 07080454)

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Exhibit R-2 (PE 0708045A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET	r (R-2 Exh	nibit)	DATE Febr	February 1997
вироет астічіту 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Manufacturing 1	PE NUMBER AND TITLE 0708045A Army Industrial Manufacturing Technology	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness Manufacturing Technology		PROJECT DE25
B. Project Change Summary FY1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	EY 1996 27927 28776 -5077 23699	FY 1997 16842 47819 47819	FY 1998 17152 11029	FY 1999 17253 15211	
Change Summary Explanation: Funding: FY 1996 - Funds reprogrammed (-5077) to higher priority requirements. Fy 1997 - Congressional funding increase (+30977) for Total Integrated Munitions Enterprise projects, PAN Fiber source development, and gear processing at the Instrumented Factory for Gears. FY 1998 - Funding reprogrammed (-6123) for higher priority requirements. FY 1999 - Funding reprogrammed (-2042) for higher priority requirements.	ther priority requirements. 0977) for Total Integrated Murr Gears. higher priority requirements. higher priority requirements.	uitions Enterpris	se projects, PAN	Fiber source developmer	nt, and
Project DE25	Page 10 of 12 Pages	<i>S2</i>		Exhibit R-2 (PE 0708045A)	8045A) Item 152
NO CONTRACTOR OF THE PROPERTY	UNCLASSIFIED	0			



RDT&E BUDGET ITEM JUSTIFICATIO	STIFICATION SHEET (R-2 Exhibit)	February 1997
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Industrial Preparedness	PROJECT DE26
	Manufacturing Technology	

					6	60				
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE26 Weapon Systems Modernization Software Maintenance	0	0	33297	34875	36336	37897	39342	41003	41003 Continuing	Continuing

enhancements funded under this project will expand the performance envelope of the selected weapon systems as well as ensure system interoperability. The project will be A. Mission Description and Justification: The Weapon Systems Modernization Software Maintenance project provides funding for modernization efforts in which post-production embedded weapon system software must be upgraded and/or enhanced. This project provides life cycle software engineering support for weapon systems in the managed by the Army Materiel Command (AMC). The work performed in this project was formerly funded in the Operations and Maintenance, Army appropriation. The maneuver control (MC), and tactical fusion (TF). Additionally, the project provides the capability to enhance or improve system software interoperability, integration and mission, and associated funding, are transferred to the RDT&E, Army appropriation, beginning in FY 1998, to represent more appropriately actual software maintenance reviews which will assess operational capabilities of current systems and relate them to readiness criteria and available funding. This strategy provides broad support for areas of tactical and satellite communications, intelligence and electronic warfare (IEW), avionics command and control (C2), fire support (FS), training and simulation, software upgrades or enhancements according to a schedule determined by priority and available funding. Prioritization will be determined through a series of program costs associated with weapon systems. During FY1997, AMC will identify specific weapon systems requiring software upgrades/enhancements. Systems will receive affordable continuous sustainment and modernization of weapon systems, providing the warfighter with the most effective, timely information available to win the testing for command, control, communications, computer, and intelligence (C4I) functions in a continuous life cycle evaluation/certification process. Software battlefield information war.

FY 1996 Accomplishments: Project not funded in FY 96.

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Modernize, and/or develop new software interfaces between information gathering hardware systems, which supply weapon system status and configuration data, and the terminal user for selected systems; provide upgrades to the depot responsible for the selected systems; install and demonstrate new capabilities as required.
- Incorporate into selected existing weapon systems software enhancements which will provide the ability to manage data exchange between planning, monitoring and controlling subsystems, and which will provide a common integrated Man-Machine Interface (MMI) spanning these subsystems to achieve desired level of interoperability.

Project DE26

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Exhibit R-2 (PE 0708045A)

	RDT&E BUDGET ITEM JUSTIFIC/	IFICATION SHEET (R-2 Exhibit)	R-2 Exhibi	t) DATE February 1997	1997
виреет АстіvітY 7 - Operationa	вироет АстіVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708045A Army Manufacturing 1	PE NUMBER AND TITLE 0708045A Army Industrial Manufacturing Technology	Preparedness	PROJECT DE26
FY 1998 Planned Total 33297	 FY 1998 Planned Program: (continued) Incorporate into selected existing weapon systems software enhancements which will provide the ability to communicate network information in a secure environment and increase the capability of existing secure communications links. Modify system software in selected existing weapon systems to improve the reliability and speed of embedded routines to meet the requirements imposed by hardware system upgrades and improved communications capabilities required for achieving the desired enhanced level of operational capability. 	software enhancements visting secure communics n systems to improve the communications capab	which will provid ttions links. ereliability and s ilities required fo	e the ability to communicate network infor peed of embedded routines to meet the requ r achieving the desired enhanced level of o	mation in a lirements perational
FY 1999 Planned Program: 34875 - Conting and den - Conting between these surface surf	nue to modernize, and/or develop new nd configuration data, and the termin nonstrate new capabilities as required nue to incorporate into selected existing planning, monitoring and controllirubsystems to achieve desired level of nue to incorporate into selected existition in a secure environment and incue to modify system software in self nuents imposed by hardware system unal capability.	w software interfaces between infal user for selected systems; proof. In weapon systems software enhing subsystems, and which will printeroperability. In weapon systems software enhinese the capability of existing sected existing weapon systems to pgrades and improved communi	ormation gatheri vide upgrades to a ancements which ovide a common ancements which cure communica improve the relii cations capabiliti	ng hardware systems, which supply weapon the depot responsible for the selected system will provide the ability to manage data exintegrated Man-Machine Interface (MMI) is will provide the ability to communicate netions links. Ability and speed of embedded routines to nees required for achieving the desired level	n system ms; install change panning twork
B. Project Change Summary FV1997 President's Budget	Summary FY 1996	96 FY 1997	FY 1998	FY 1999 0	
Appropriated Value Adjustments to Appropriated Value FY1998 Pres Bud Request	ropriated Value		33297	34875	
Change Summary Ex	Change Summary Explanation: Funding: Beginning in FY 1998, funds are appropriately to repres	funds are transferred from the Operations and Maintenance, Army approl orepresent costs associated with weapon systems software maintenance.	erations and Mai weapon systems	funds are transferred from the Operations and Maintenance, Army appropriation to the RDTE, Army io represent costs associated with weapon systems software maintenance.	, Army
Project DE26		Page 12 of 12 Pages		Exhibit R-2 (PE 0708045A)	7

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (R	2-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	ıt		PE N 10(PE NUMBER AND TITLE 1001018A NATO Joint STARS	TITLE VATO Joi	nt STAR	S			PROJECT C35
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
C35 NATO Joint STARS	9500	0	13500	15105	0	0	0	0	0	38105

Ground Station and various Allied weapon systems. This is not a new start, but a continuation of the effort previously funded in FY 95 under PE 0604770A. This effort is 1995. A NAGS Project Office was established at SHAPE Technical Center (STC) and will continue to operate until the final NAGS configuration is selected. Under this PE/Project, the Army will conduct and support interoperability experimentation and demonstrations between the Joint Surveillance Target Radar System (Joint STARS) A. Mission Description and Budget Item Justification: The United States is a major participant in a cooperative venture to select and procure a ground surveillance capability for NATO forces. Initial efforts to evaluate various potential solution sets for the NATO Alliance Ground Surveillance System (NAGS) commenced in May in support of upgrades for NATO International Activities and appropriately placed in Budget Activity 7. Acquisition Strategy: The NATO nations and military commanders have identified a requirement for a NAGS. Senior U.S. leadership has strongly supported and directed aggressively participate in military demonstrations and interoperability evaluations. The funds provide dedicated hardware and technical support to integrate Joint STARS data into a suite of NATO component systems and then demonstrate the capability. All hardware has been procured. Technical support continues until the NAGS decision proposed by the U.S. as the best solution for providing NATO with the required capability. The NAGS selection is scheduled for FY 97. This PE permits the US Army to full U.S. participation in ongoing evaluations of the various ground surveillance systems within the member nations military forces. The Joint STARS system has been is announced.

FY 1996 Accomplishments:

- System interoperability design/development 8100
 - Tests and demonstrations 1020
- Supported Allied/NATO exercises 380 9500
 - Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Develop NATO C3I interfaces 0009
- Integrate NATO sensor platform interfaces 4000
- Complete ground station European power and shelter modifications 3500

Project C35

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Exhibit R-2 (PE 1001018A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I ITEM JUS	TIFICATI	ON SH	EET (R	-2 Exhil	oit)		DATE Fet	February 1997	76
BUDGET ACTIVITY 7 - Operational System Development	nent		1001	PE NUMBER AND TITLE 1001018A NAT	π∟E ATO Joii	D TITLE NATO Joint STARS			H O	PROJECT C35
FY 1999 Planned Program: 12949 Incorporate radar upgrade modifications 1900 Conduct technical/operational tests and demonstrations 256 Support Allied/NATO exercises Total 15105	le modifications tional tests and de kercises	monstrations								
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996. 0 9500	FY 1997 0	0	FY 1998 0	FY 1999 0	Øl 0			
FY 1998 Pres Bud Request		9500		0	13500	15105	5			
Change Summary Explanation: Funding: Congressional increase to support program under PE 0604770A. Funds were reprogrammed to PE 1001018A (new PE) as directed by OSD.	pport program un	der PE 060477	'0A. Funds	s were repro	grammed to	PE 1001018	A (new PE)	as directed	by OSD.	
C. Other Program Funding Summary	700		0						To	Total
BA1080 Joint STARS (TIARA) BS9724 Joint STARS Spares BA1082 NATO-AGS	FY 1996 82376 3524	FY 1997 85321 8762	FY 1998 118873 6313 26153	89180 6445 32575	FY 2000 91196 6531	FY 2001 102224 6620	FY 2002 36146 7380	FY 2003 18039 4725	Compl Cont	Cost Cont Cont
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	4	FY 1998	8 (,	_	FY 1999	4
Established Embryonic Program Office Award NATO Support Contract NAGS Prototype Procurement Integration into STC Initial Multinational Demonstration Initiate NATO Minimum Upgrades Initiate Radar Upgrades	*× *×	*				×				
*Completed milestone										
Project C35		I	Page 2 of 3 Pages	Pages			Exhibi	Exhibit R-2 (PE 1001018A)	001018A)	
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RDT&E PROGRAM ELEMENT	SAM EL		PROJECT	COST B	REAKD	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	197
BUDGET ACTIVITY 7 - Operational System Development	elopmen	īt		PE NUMBER 100101	PE NUMBER AND TITLE 1001018A NATO	PE NUMBER AND TITLE 1001018A NATO Joint STARS	ARS			PROJECT C35
A. Project Cost Breakdown Interoperability Software Development Hardware/Prototype Development Program Management Total			FY 1996 5551 3799 150 9500		FY 1997	FY 1998 7830 5400 270 13500	FY 1999 8758 6040 307 15105			
B. Budget Acquisition History and Planning Information	Janning Inf	ormation								
Performing Organizations Contractor or Contract										
nent Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity Vehicle I Product Development Organizations	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Motorola C/FP I	Dec 95	3649	3649		3649				0	3649
SS/CPFF	Aug 95	5701	5701		5701				0	5701
(92-c-5203) TBD			28028				13230	14798	0	28028
Support and Management Organizations Project Mgmt Test and Evaluation Organizations: None	ions				150		270	307	0	727
Government Furnished Property: None	one			•						
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation					9350		13230 270	14798 307		37378 727
Total Project					9500		13500	15105		38105
Some						١				
Project C35			Pag	Page 3 of 3 Pages	S		Exhil	Exhibit R-3 (PE 1001018A)	1001018A)	
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*	HQDA (DAMH-ZB), Pulaski Bldg, Room 4229, 20 Massachusetts Avenue, Washington, DC 20314
*	US Army Cost And Economic Analysis Center, ATTN: SFFM-CA-PI, 5611 Columbia Pike, Falls Church, VA 22041-5050
	BMDO/RM, Pentagon, Room 1E1037, Washington, DC 20310
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*	Commander, US Army Medical R&D Command, ATTN: SGRD-RMC, Fort Detrick, Frederick, MD 21701-5012
*	Commander, US Army Medical R&D Command, ATTN: SGRD-PR, Fort Detrick, Frederick, MD 21701-5012
*	Commander, US Army Training and Doctrine Command, ATTN: ATCD-E, Fort Monroe, VA 23651-5000
*	CMDT, Army Field Artillery School, ATTN: ATSF-CSI-P, ATSF-CBL, Ft. Sill, OK 73503-5600
*	CDR, Army Aviation Ctr & Ft. Rucker, ATTN: ATZS-CDI, Ft. Rucker, AL 36362-5000
*	CDR, Army Intelligence Ctr and FT. Huachucha, ATTN: ATZS-CDI-I, ATZS-CDT, Ft. Huachucha, AZ 85613-7000
*	CMDT, U.S. Army Signal Ctr, ATTN: ATZH-CDM, ATZH-BLT, Ft. Gordan, GA 30905-5000
*	Force Design Directorate, ATTN: ATCD-F, 415 Sherman Ave., Ft. Leavenworth, KS 66027-5000
*	CDR, USACHCS, ATTN: ATSC-CD, Ft. Monmouth, NJ 07703-5612
*	CDR, U.S. Army Medical Center & School, ATTN: HSMC-FCM, Ft. Sam Houston, TX 78234
*	CMDT, U.S. Army Air Defense Artillery School, ATTN; ATSA-CDM, Ft. Bliss, TX 79916
*	CMDT, U.S. Army Infantry School, ATTN: ATSH-IWC, ATSH-MLS, Ft. Benning, GA 31905-5400
*	CMDT, U.S. Army Armor School, ATTN: ATZK-CD-ML, ATZK-MW, Ft. Knox, KY 40121-5200
*	CMDT, U.S. Army Engineer School, ATTN: ATSE-CD-M, Ft. Leonard Wood, MO 65473-5000
*	CMDT, U.S. Army Chemical School, ATTN: ATZN-CM-CS, Ft. McClellan, AL 36205-5020
*	CMDT, U.S. Army Military Police School, ATTN: ATZN-MP-CM, Ft. McClellan, AL 36205-5020
*	Commander, US Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-MB, 5001 Eisenhower Avenue,
	Alexandria, VA 22333-5600
*	Commander, US Army Operational Test and Evaluation Command, ATTN: CSTE-RMZ, Park Center IV, 4501 Ford Avenue,
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*	Commander, US Army Materiel Command, ATTN: AMCAQ-B-TILO, 5001 Eisenhower Avenue. Alexandria VA 22333
*	Commander, US Army Communications-Electronics Command, ATTN: AMSEL-CG, Ft. Monmouth, NJ 07703-5000
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